

**Phase 2**  
**Extended Site Investigation**  
for  
**Site 9- Electronic**  
**Countermeasures (ECM) Area**

**Naval Weapons**  
**Industrial Reserve Plant**  
Calverton, New York



**Northern Division**  
**Naval Facilities Engineering Command**  
**Contract Number N62472-90-D-1298**  
**Contract Task Order 0270**

December 2000



**TETRA TECH NUS, INC.**

**PHASE 2 EXTENDED SITE INVESTIGATION  
FOR  
SITE 9 – ELECTRONIC COUNTER MEASURES  
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT  
CALVERTON, NEW YORK**

**COMPREHENSIVE LONG-TERM  
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

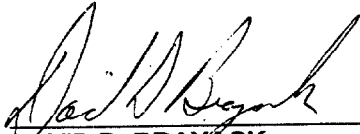
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Northern Division  
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10 Industrial Highway, Mail Stop #82  
Lester, Pennsylvania 19113-2090**

**Submitted by:  
Tetra Tech NUS Corporation  
600 Clark Avenue, Suite 3  
King of Prussia, Pennsylvania 19406-1433**

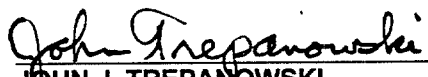
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**DECEMBER 2000**

**SUBMITTED BY:**

  
\_\_\_\_\_  
**DAVID D. BRAYACK  
PROJECT MANAGER  
PITTSBURGH, PENNSYLVANIA**

**APPROVED FOR SUBMISSION BY:**

  
\_\_\_\_\_  
**JOHN J. TREPANOWSKI  
PROGRAM MANAGER  
KING OF PRUSSIA, PENNSYLVANIA**

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## ACRONYMS

bgs	below ground surface
bwt	below water table
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CF Braun	CF Braun Engineering Corporation
CLEAN	Comprehensive Long-term Environmental Action Navy
CMS	Corrective Measures Study
CTO	Contract Task Order
DOH	New York State Department of Health
ECM	Electronic Countermeasures
EPA	United States Environmental Protection Agency
ESI	Extended Site Investigation
FS	Feasibility Study
ft/day	feet per day
GOCO	Government-Owned Contractor-Operated
GW	Groundwater
HNUS	Halliburton NUS
HSA	Hollow Stem Auger
IAS	Initial Assessment Study
IR	Installation Restoration
MCL	Maximum Contamination Limit
MCLG	Maximum Contaminant Level Goal
msl	mean sea level
NAVFAC	Navel Facilities Engineering Command
Navy	United States Department of Navy
NCP	National Oil and Hazardous Substances Contingency Plan
NYSDEC	New York State Department of Environmental Conservation
NWIRP	Naval Weapons Industrial Reserve Plant
PA	Preliminary Assessment
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RFA	RCRA Facility Investigation - Sampling Visit
RFI	RCRA Facility Investigation
SI	Site Investigation
TAGM	Technical and Administrative Guidance Memorandum
TCA	1,1,1-trichloroethane

TCL	Target Compound List
TtNUS	Tetra Tech NUS, Inc.
μg/L	microgram per liter
USDOI	U.S. Department of the Interior
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

## 1.0 INTRODUCTION

### 1.1 PURPOSE

The Northern Division of the Naval Facilities Engineering Command (NAVFAC) has issued Contract Task Order (CTO) 0270 to Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62472-90-D-1298 to perform a Phase 2 Extended Site Investigation for Site 9 - Electronic Counter Measures (ECM) Area at the Naval Weapons Industrial Reserve Plant (NWIRP), located in Calverton, New York.

This work is part of the Navy's Installation Restoration (IR) Program, which is designed to identify contamination of Navy and Marine Corps lands/facilities resulting from past operations and to institute corrective measures, as needed. There are typically four distinct stages. Stage 1 is the Preliminary Assessment (PA), which was formerly known as the Initial Assessment Study (IAS). Stage 2 is a RCRA Facility Assessment -Sampling Visit (RFA), which is also referred to as a Extended Site Investigation (ESI), which augments the information collected in the Preliminary Assessment. Stage 3 is the RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) (also referred to as a Remedial Investigation/Feasibility Study [RI/FS]), which characterizes the contamination at a facility and develops options for remediation of the site. Stage 4 is the Corrective Action, which results in the control or cleanup of contamination at sites. This report has been prepared under Stage 2 and serves as a supplemental report to the RFA report and RFA Addendum for NWIRP Calverton, New York, (Halliburton NUS [HNUS], 1995 and CF Braun 1996).

This report specifically addresses Site 9, the ECM Area. In addition to Site 9, Phase 2 Remedial Investigations are continuing at several other IR sites. The results from the investigation at the other sites will be presented in supplemental Phase 2 reports.

This Extended Site Investigation (ESI), which is analagous to a Phase 2 RCRA Facility Assessment (RFA), was conducted in accordance with the requirements of the New York State Department of Environmental Conservation Division of Solid & Hazardous Materials Part 373 Permit that was issued to the Navy on April 18, 2000 under their implementing Regulations (6NYCRR Part 621). This permit supersedes and replaces the original Part 373 Permit to Operate a Hazardous Waste Storage Facility that was issued to the then Grumman Aerospace Corporation on March 25, 1992. The new permit, issued only to the Department of Navy, deals exclusively with those Solid Waste Management Units (SWMUs) that remain on the former NWIRP Calverton property and any Corrective Actions that may be required in order to adequately address each IR Site. Although the Part 373 Permit is the enforceable document governing the Navy's remedial actions, the NYSDEC State Superfund group, located out of the Albany

office, retains primary responsibility for regulatory oversight of the Navy's actions. As such, the Navy has agreed to a request made by the NYSDEC State Superfund group to utilize terminology associated with NYSDEC's State Superfund program which is closely related to the Federal CERCLA program. The CERCLA terminology that is to be used parallels the RCRA terminology and the implementation phases of each have been determined to meet the substantive requirements of both programs and will also satisfy the Corrective Action requirements set forth in Module III of the Part 373 Permit.

## **1.2 FACILITY LOCATION**

The site involved in this study is located within the confines of NWIRP Calverton, Suffolk County, New York, (see Figure 1-1 and Figure 1-2). NWIRP Calverton is located on Long Island approximately 70 miles east of New York City. The facility is located within the municipality of Riverhead.

Prior to 1996, NWIRP Calverton was a government-owned contractor-operated (GOCO) facility which was operated by the Northrop Grumman Corporation. The facility had an overall area of approximately 6,000 acres, of which 3,000 acres lie entirely within a fenced-in boundary. The majority of the industrial activity was confined to the south central portion of this fenced-in area.

Currently, NWIRP Calverton consists of four separate parcels of land totaling approximately 358 acres. Eight Navy IR sites are included within these parcels as follows. The location of the parcels and sites are presented in Figure 1-2.

### Parcel A (32 acres)

Site 2 - Fire Training Area

### Parcel B1 (40 acres)

Site 6A - Fuel Calibration Area

Site 10B - Engine Test House

### Parcel B2 (131 acres)

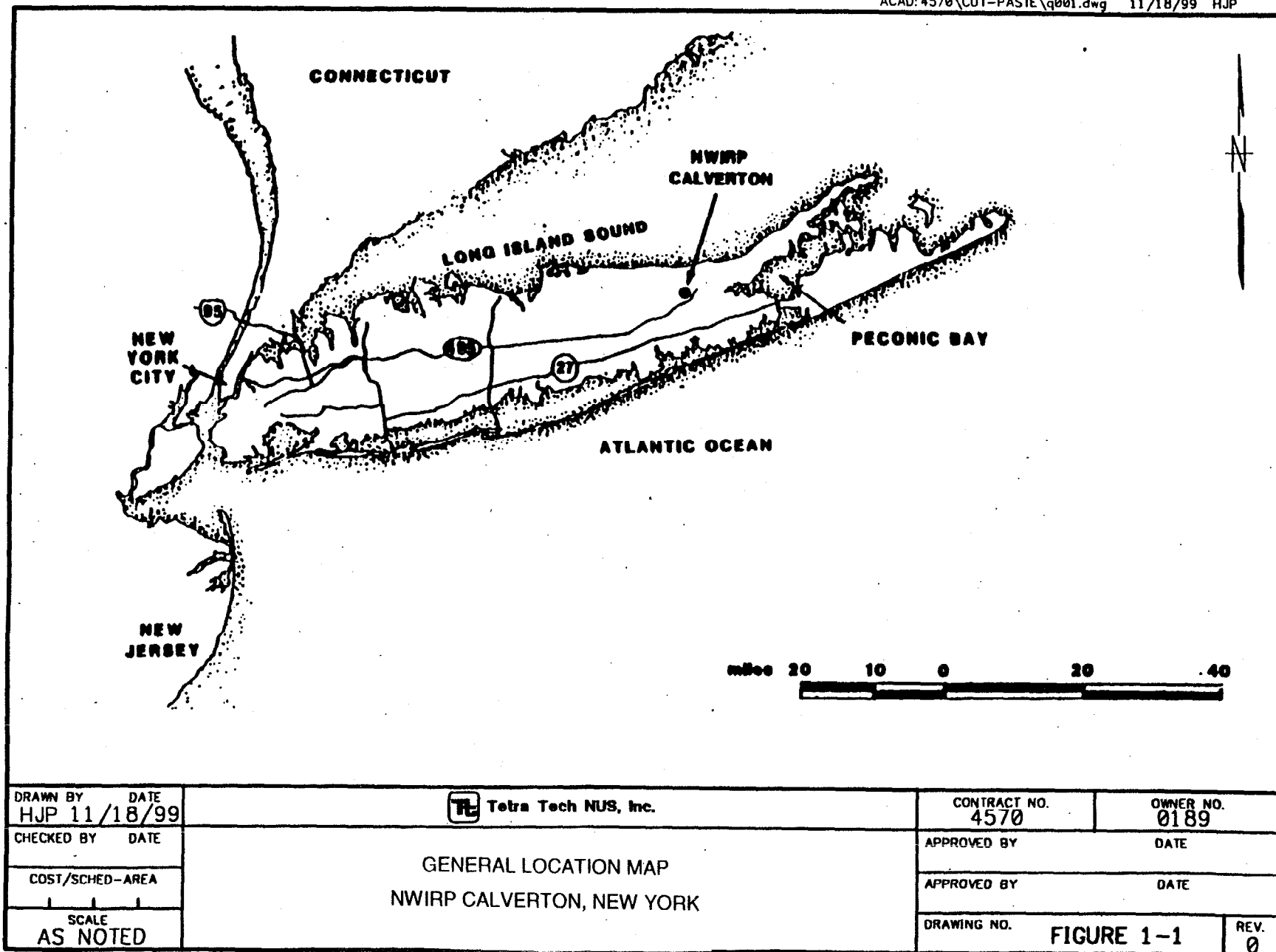
Southern Area

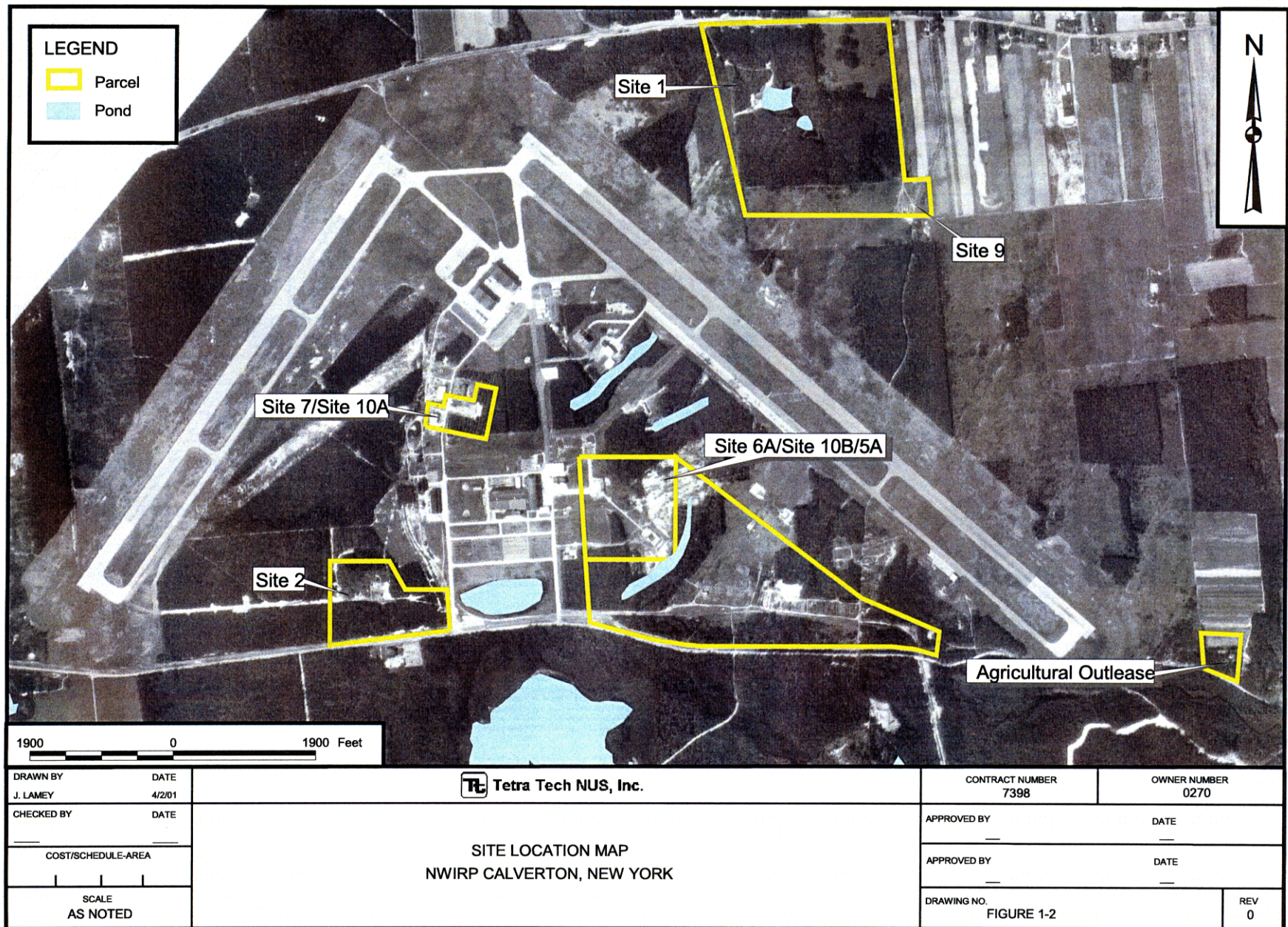
### Parcel C (10 acres)

Site 7 - Fuel Depot

Site 10A - Jet Fuel Systems Laboratory

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Parcel D (145 acres)

Site 1- Northeast Pond Disposal Area

Site 9 - ECM Area

### **1.3 FACILITY HISTORY**

NWIRP Calverton has been owned by the U.S. Department of the Navy (Navy) since the early 1950's, at which time the land was purchased from a number of private owners. The facility was expanded in 1958 through additional purchases of privately-owned land. Northrop Grumman Corporation (previously Grumman Corporation) leased the land and was the sole operator of the facility from its construction until February 1996. In 1996, the land was returned to the Navy.

In September 1998, the majority of the land within the developed section of the facility was transferred to the Town of Riverhead for redevelopment. Because of the need for additional environmental investigation and the potential need for remediation, the Navy retained four parcels of land within the developed section. The four parcels and associated Navy IR Sites are presented on Figure 1-2.

Approximately 3000 acres of undeveloped land outside of the fenced area were transferred to the Veterans Administration (140 acres) and the New York State Department of Environmental Conservation in 1999 (approximately 2,860 acres).

NWIRP Calverton was constructed in the early 1950's for use in the development, assembly, testing, refitting, and retrofitting of Naval combat aircraft. The facility supported aircraft design and production at the Northrop Grumman's Bethpage facility, which is located in Nassau County, New York.

The majority of industrial activity at the facility was confined to the developed area in the center and south center of the facility, between the two runways. Industrial activities at the facility were related to the manufacturing and assembly of aircraft and aircraft components. Operations which resulted in hazardous waste generation included but were not limited to metal finishing processes, such as metal cleaning and electroplating, other maintenance operations, temporary storage of hazardous waste, fueling operations, and various training operations. The painting of aircraft and components resulted in additional waste generation.

## **1.4 SURFACE WATER HYDROLOGY**

The majority of the NWIRP Calverton is located within the Peconic River drainage basin. The eastward-flowing Peconic River is located approximately 1,300 feet south of the facility at its closest point. The Peconic River discharges to Peconic Bay located 8.5 stream miles from the facility.

Major surface water features near the facility include McKay Lake and Northeast Pond (see Figure 1-2). McKay Lake is a man-made groundwater recharge basin located north of River Road, midway along the southern site border. Northeast Pond is located at the northeast corner of the facility. Several small drainage basins exist near the Fuel Calibration Area (Runway Ponds). All of these surface water features are land locked, with the exception of McKay Lake, which has an intermittent discharge to Swan Pond, located 1,500 feet to the south of NWIRP Calverton. Overhead flow from the drainage basins to the Peconic River may also occur periodically.

A number of small wetlands exist on the Calverton facility. The U.S. Department of the Interior (USDOI), Fish and Wildlife Department classifies the western half of the 2-acre Northeast Pond as palustrine, forested/scrub/shrub/emergent wetland. The drainage basins are classified as palustrine, scrub/shrub/emergent wetland (USDOI, 1980).

## **1.5 HYDROGEOLOGY**

The unconsolidated sediments that underlie NWIRP Calverton are generally coarse-grained with high porosities and permeabilities. These factors create aquifers with high yields and transmissivities.

The Upper Glacial Formation, the Magothy Formation, and the Lloyd Sand are the major regional aquifers. The Upper Glacial and Magothy aquifers are of principle importance in Suffolk County because of their proximity to the ground surface. The Raritan Clay of the Raritan Formation has a very low permeability and acts as a regional confining layer that is believed to minimize the local risk of contamination to the underlying Lloyd Sand aquifer (McClymonds and Frank, 1972). The Lloyd Sand has not been extensively developed due to its depth and the abundant water available in the overlying aquifers.

The Upper Glacial aquifer is widely used as a source of groundwater in Suffolk County. The water table beneath the NWIRP Calverton lies within this aquifer. Porosities in excess of 30 percent have been calculated for the Upper Glacial aquifer in adjoining Nassau County. Hydraulic conductivity is estimated at 270 feet per day (ft/day).

The Magothy aquifer is widely used as a source of groundwater in Suffolk County. The most productive units are coarser sand and gravel. The permeability of the Magothy is high and hydraulic conductivity has been calculated in excess of 70 ft/day.

The Upper Glacial and Magothy aquifers are believed to be hydraulically interconnected and to function as a single unconfined aquifer. Logs from on-site monitoring wells, previous hydrogeologic investigations, and geologic mapping indicate that although clay lenses that may create locally confining and/or perched conditions are present in both aquifers, these lenses are not widespread and do not function as regional aquitards (McClymonds and Frank, 1972; Fetter, 1976).

NWIRP Calverton straddles a regional groundwater divide, with groundwater beneath the northern half of the facility flowing to the northeast, with the Long Island Sound as the probable discharge point for groundwater in the shallow aquifer zones. Groundwater beneath the southern half of the facility flows to the southeast and the Peconic River basin is the likely discharge point. Groundwater on the divide, the location of which can fluctuate, flows to the east.

## **1.6 GENERAL ECOLOGICAL SETTING OF NWIRP CALVERTON**

NWIRP Calverton is located in the Long Island Pine Barrens, an area characterized by forests dominated by pitch pine (*Pinus rigida*) and oaks (*Quercus* sp.) growing on coarse-textured upland soils. Rainfall leaches rapidly through the soils recharging a vast underlying aquifer but creating a dry environment at the surface which predisposes the vegetation to frequent periodic wildfires. Where the frequent fire cycle is intact, the forest is typically dominated by pitch pine with a dense understory of scrub oak (*Quercus ilicifolia*), a shrub oak that rarely grows taller than 20 feet. Pitch pine is thick barked and thus generally resistant to brief fires, and both pitch pine and scrub oak regenerate rapidly following heavier fires (Myers and Gaffney, 1990; Navy, 1986).

Dominance by taller oaks; especially scarlet oak (*Quercus coccinea*), white oak (*Quercus alba*), and black oak (*Quercus velutina*); increases where the fire cycle has been suppressed by human activity. A successional sequence progressing from a pitch pine-shrub oak forest, to a pitch pine-oak forest (taller oaks), and then to an oak-pitch pine forest (taller oaks) is recognized when fire is excluded (Myers and Gaffney, 1990). Fire has generally been excluded from inside the NWIRP Calverton fence since its establishment in 1952, and most mature forest within the fence cover falls into the pitch pine-oak or oak-pitch pine classifications. Especially in the northern part of the fenced area, where soils are less coarse, much forest cover is dominated by oaks, and pitch pine is only a minor associate.

Also typical of the Long Island Pine Barrens are coastal plain ponds, isolated shallow ponds with fluctuating levels of acidic, tea-colored water. These ponds are typically fringed by emergent wetland

communities dominated by various rushes, sedges, and forbs and known to support a variety of rare, threatened, and endangered species (Myers and Gaffney, 1990; Conrad, 1996). The fenced part of NWIRP Calverton contains several coastal plain ponds, including Northeast Pond, Shannon's Pond immediately south of Northeast Pond, North Pond, and three narrow ponds on the edge of the developed area termed the Runway Ponds. Most of these ponds, especially Northeast Pond and the Runway Ponds, have been hydrologically altered by human activity. Also, one man-made lake (McKay Lake) is present in the south central portion of the facility.

## **1.7 PREVIOUS INVESTIGATIONS**

Previous investigations at the site consisted of the following:

- IAS (Navy, 1986)
- SI (HNUS, 1992a)
- RFA (HNUS 1995)
- RFA Addendum (CFBraun, 1997a)

This report has been prepared to supplement the NWIRP Calverton RFA Addendum report issued in 1997, (CFBraun, 1997a). Results from previous investigations are presented in Section 2.2. The RFA report concluded that additional testing was necessary to confirm nature and extent of contamination at several sites. At Site 9 – ECM Area, specific data gaps from the previous work are identified in the site-specific sections of this report. Low-level VOC contamination was detected at the Navy's eastern boundary as well as in wells located on property adjacent and downgradient from the ECM Area. This led to a data gap being identified that the extent of this low-level VOC plume was not adequately defined, especially on off-site property.

The Phase 2 ESI testing program was presented in the Phase 2 RFI Field Sampling Plan (CF Braun 1997b) and incorporates comments from the NYSDEC, New York State Department of Health (DOH), The Nature Conservancy, Suffolk County Department of Health Services, and the USEPA, Region II.

## **1.8 SUMMARY OF FIELD ACTIVITIES**

Field activities conducted during the Phase 2 ESI are summarized as follows. A detailed description of field activities is presented in Section 3.0 of this report.

- Two permanent onsite groundwater monitoring wells were sampled and analyzed for cadmium in 1997.
- Eleven offsite temporary monitoring wells were installed in 2000. Groundwater was sampled at depth and analyzed for volatile organic compounds (VOCs) analysis.
- Two permanent onsite groundwater monitoring wells were sampled and analyzed for VOCs in 2000.

#### **1.9 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SAMPLES**

Groundwater samples were analyzed by Ecotest (48-hour turnaround time) for VOCs in 2000, Quanterra, Inc. for cadmium in 1997, and Severn Trent Laboratories for Target Compound List (TCL) VOCs in 2000. Analytical results, analytical methods, and data qualifiers are presented in Appendix A.

The Ecotest and Severn Trent Laboratories data were evaluated based upon trip blank contamination. No detections were noted in the trip blanks. Only three positive detections of chemicals were noted in the current data set. 1,1,1 Trichloroethane (TCA) was detected in one sample. TCA is a known site contaminant. Acetone and carbon disulfide were detected in one sample each. Acetone is a common laboratory contaminant and carbon disulfide is sometimes a laboratory contaminant. these chemicals have not been identified as site contaminants.

## **2.0 SITE BACKGROUND**

### **2.1 SITE DESCRIPTION/ENVIRONMENTAL SETTING**

The Electronic Counter Measure (ECM) Area is located in the northeast corner of the NWIRP, Calverton, (See Figure 1-2). This area was constructed in the early 1970's and was used into the early 1990s for testing and evaluating electronic equipment. 1,1,1-Trichloroethane (TCA) was used as a solvent/cleaning agent in the ECM laboratory.

General features at the site formerly included the ECM building (Building 07-39), an old debris disposal area located approximately 600 feet to the south, and two depressions located to the east and to the southeast, (See Figure 2-1). In approximately 1996, the ECM building was demolished and equipment in the surrounding area removed. Currently, the area is an open field.

Located east of the ECM Area is the property fence line. Beyond the fence line, an experimental sod farm program was conducted in the late 1980s to early 1990s. The program consisted of growing sod using municipal solid waste compost to amend the natural soils and provide nutrients. As part of this experimental program, a series of monitoring wells (MW1 to MW7) were installed and monitored by the Suffolk County Department of Health. TCA at a concentration of 190 ug/l was detected in the well furthest from the ECM area (MW-7) in the early 1990s. Monitoring wells closer to the site exhibited lower concentrations of chemicals.

In 1999, ownership of the property adjacent to the Navy's ECM Area changed and the property is now used for sand mining operations. The topography has been significantly changed with some areas being used as a borrow pit and other areas used for stockpiling of soils.

### **2.2 PREVIOUS INVESTIGATIONS**

The investigation at the ECM area was initiated at the request of the Suffolk County Department of Health. TCA and related compounds were detected in samples collected from the offsite wells. Groundwater flow patterns indicated that the ECM area is up gradient of the groundwater contamination and could be a potential source of the contamination. In addition, TCA was used in the ECM laboratory. Workers reported that fresh TCA was stored in a 55-gallon drum on the east side of the plant and that waste TCA was placed in shallow pan outside the east door of the building and allowed to evaporate. The workers reported that approximately 10 gallons per year of TCA were used in the laboratory operations.

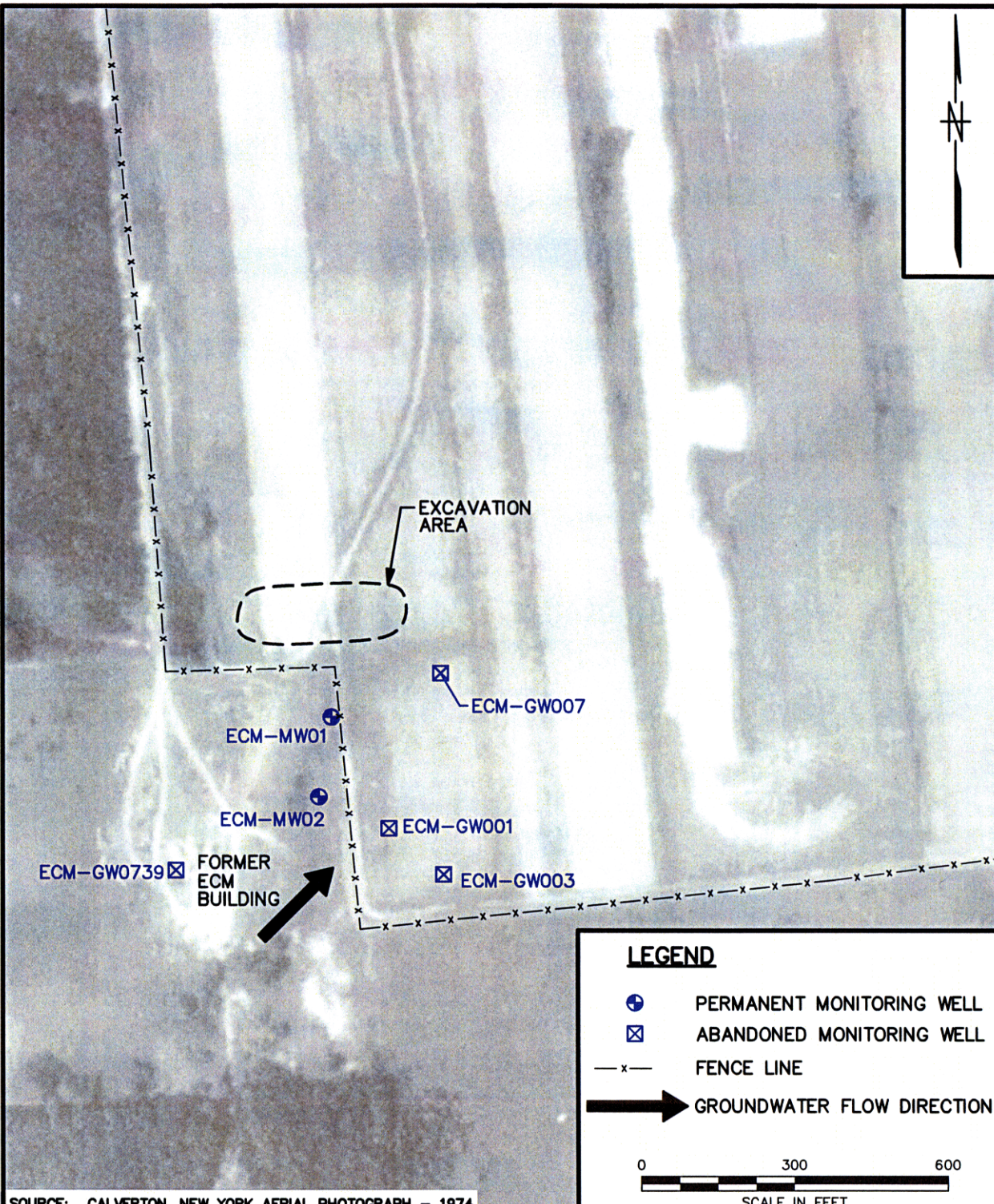
Based on the above, an RFA was conducted in the 1994/1995 timeframe (HNUS, 1995). This assessment found TCA in onsite monitoring wells and confirmed TCA in the offsite county monitoring wells. Analytical results are summarized in Figure 2-2. However, based on the concentration detected in the on site wells relative to off site wells, the 1995 RFA report concluded that the ECM area was not a likely source and, at best, was not a continuing source of the off site contamination due to Northrop Grumman ceasing operations at the ECM Area in anticipation of vacating the Navy's property.

Trace levels of non-halogenated organic chemicals were detected in onsite soil samples. However, the concentration of the detected chemicals were below relevant criteria and these chemicals were not detected in off site groundwater.

Two data gaps were identified in the 1995 RFA report. One data gap was that cadmium was detected in the on site groundwater supply well at a concentration slightly greater than drinking water standards (a nondetect result and a duplicate result of 9.0 ug/l versus a standard of 5 ug/l). Based on the site history, there is no reason to suspect cadmium as a site related contaminant. However, supplemental testing was required to better define whether cadmium was actually present at the site, and if present at environmentally significant concentrations. In the interim, the water supply well was abandoned in 1996 when the ECM area was demolished.

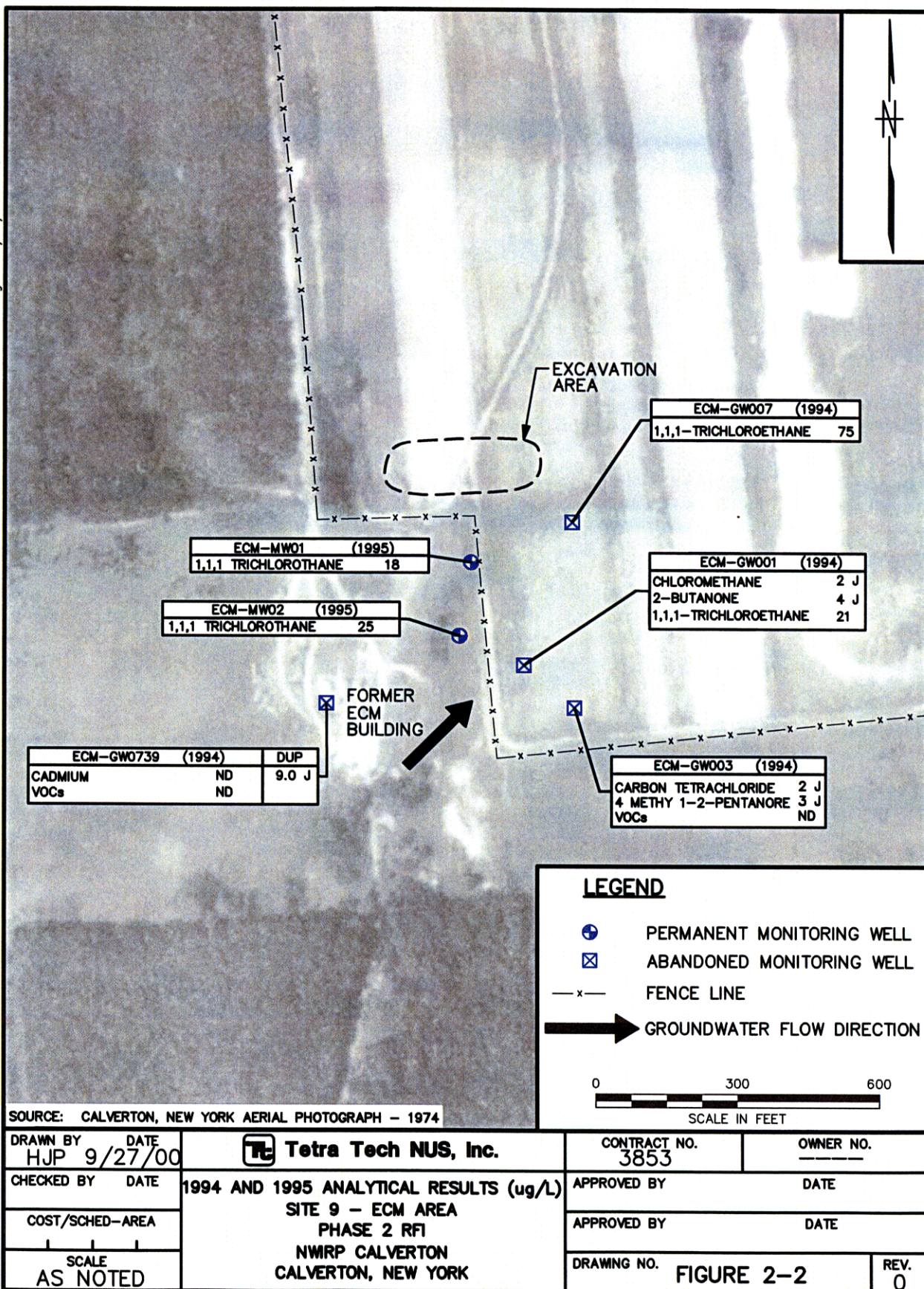
The second data gap was to further delineate the nature and extent of offsite VOC groundwater contamination. The historic data that showed that the most contaminated groundwater was furthest from the site.

To better define whether the TCA originated from the ECM Area, six temporary monitoring wells were installed in November and December 1995 along the fence north and east of the ECM laboratory. TCA was detected in five of the six wells, and at a maximum concentration 35 ug/l. These findings provided evidence that the ECM Area was a possible source of the TCA contamination. To confirm the temporary monitoring well results, two permanent monitoring wells were installed in this area (ECM-MW01 and MW02) and sampled for VOCs. TCA was detected in these permanent monitoring wells at concentrations of 18 and 25 ug/l. This data is detailed in the RFA Addendum (CF Braun 1997a). Data from the permanent (current and abandoned) monitoring wells is presented in Figure 2-2.



SOURCE: CALVERTON, NEW YORK AERIAL PHOTOGRAPH - 1974

DRAWN BY HJP	DATE 9/27/00	<b>Tetra Tech NUS, Inc.</b>	CONTRACT NO. 3853	OWNER NO. 
CHECKED BY	DATE		APPROVED BY	DATE
COST/SCHED-AREA			APPROVED BY	DATE
SCALE AS NOTED			DRAWING NO.	REV.
SITE LAYOUT SITE 9 - ECM AREA PHASE 2 RFI NWRP CALVERTON CALVERTON, NEW YORK		FIGURE 2-1		0



In 1997, a Phase 2 RFI Field Sampling Plan (CF Braun 1997b) was prepared to address the data gaps at Site 9, as well as for other facility sites. However, the Navy could not obtain access to the offsite property adjacent to the ECM area and as a result, the offsite groundwater investigation was delayed. In 2000, access to the property through a new property owner was obtained. In addition, instead of the six proposed temporary monitoring wells, ten temporary monitoring wells were proposed in a work plan addendum (TtNUS, 2000). During the field program, one of the ten wells could not be installed because of site activities, but two additional wells were also added to the program. The results of this investigation are presented in Section 4.0 of this report.

### **2.3 GEOLOGY**

During the 1995 RFA, eight soil borings (ECM-SB01 - ECM-SB08) were installed. The borings were advanced to the water table using hollow-stem drilling techniques. Soils throughout the area were described primarily as fine to medium grained sand with sub-round to round pebbles from the ground surface to the bottom of the boring.

### **2.4 HYDROGEOLOGY**

Based on the soil borings drilled at the ECM Area, the water table was encountered at a depth of approximately 25 to 44 feet below ground surface. Based on regional groundwater measurements conducted in 1997, groundwater flow in this area is to the northeast. The average groundwater gradient at this site is approximately 0.15 percent. Groundwater seepage velocities are estimated to be 27 feet per year in the deeper aquifer to 270 feet per year in the shallow aquifer.

### **3.0 INVESTIGATION SUMMARY**

Field work was conducted at the Site 9 - ECM Area as part of the Phase 2 Extended Site Investigation (ESI). The field work consisted of sampling two onsite permanent monitoring wells in 1997 (two rounds) and in 2000 (one round), and the installation and sampling of eleven offsite temporary monitoring wells in 2000. The field work was conducted in accordance with the Phase 2 RCRA Facility Investigation Field Sampling Plan in 1997 (CF Braun 1997b) as amended by the Work Plan Addendum in 2000 (TtNUS, 2000).

#### **3.1 PERMANENT MONITORING WELL SAMPLING**

Two permanent monitoring wells are located in the northeast corner of the ECM Area (ECM-MW01 and MW02), see Figure 3-1. Both of these wells are screened across the water table. Based on groundwater flow mapping, with groundwater flowing to the northeast, these wells would be located hydraulically down gradient of the former ECM building/laboratory.

These wells were sampled twice in 1997 for cadmium and once in 2000 for TCL VOCs. The wells were sampled by low flow sample techniques, via a variable speed submersible pump. Groundwater sample log sheets, monitoring well purge records, and chain of custody forms are presented in Appendix A. Analytical results are presented in Section 4.0.

In addition, one onsite groundwater extraction well and seven offsite permanent monitoring wells (shown as abandoned) were present in the immediate area. ECM-GW0739 was a low-capacity (gpm range) production well for building use, which was abandoned in 1996 when the building was demolished. Monitoring wells ECM-GW001 to GW007 were located on the adjacent property east of the ECM Area. Three of the wells (ECM-GW001, 003, and 007) were sampled in 1994 by the Navy to confirm previous findings and are shown on Figure 3-1. The balance of the off site permanent wells were in the same general area as these three wells, in a "L" shape starting at ECM-GW001 and ending at ECM-GW007. Excavated soils are currently being stockpiled in this area. Therefore, it is likely that these offsite permanent monitoring wells have been lost.

#### **3.2 TEMPORARY GROUNDWATER MONITORING WELLS**

Eleven temporary groundwater monitoring wells were installed and sampled in 2000, see Figure 3-1. The wells were installed in three stages, consisting of 5 wells in June 2000 (ECM-TW07 to TW11), 4 wells in July 2000 (ECM-TW12 to TW15), and 2 wells in August 2000 (ECM-TW20 and

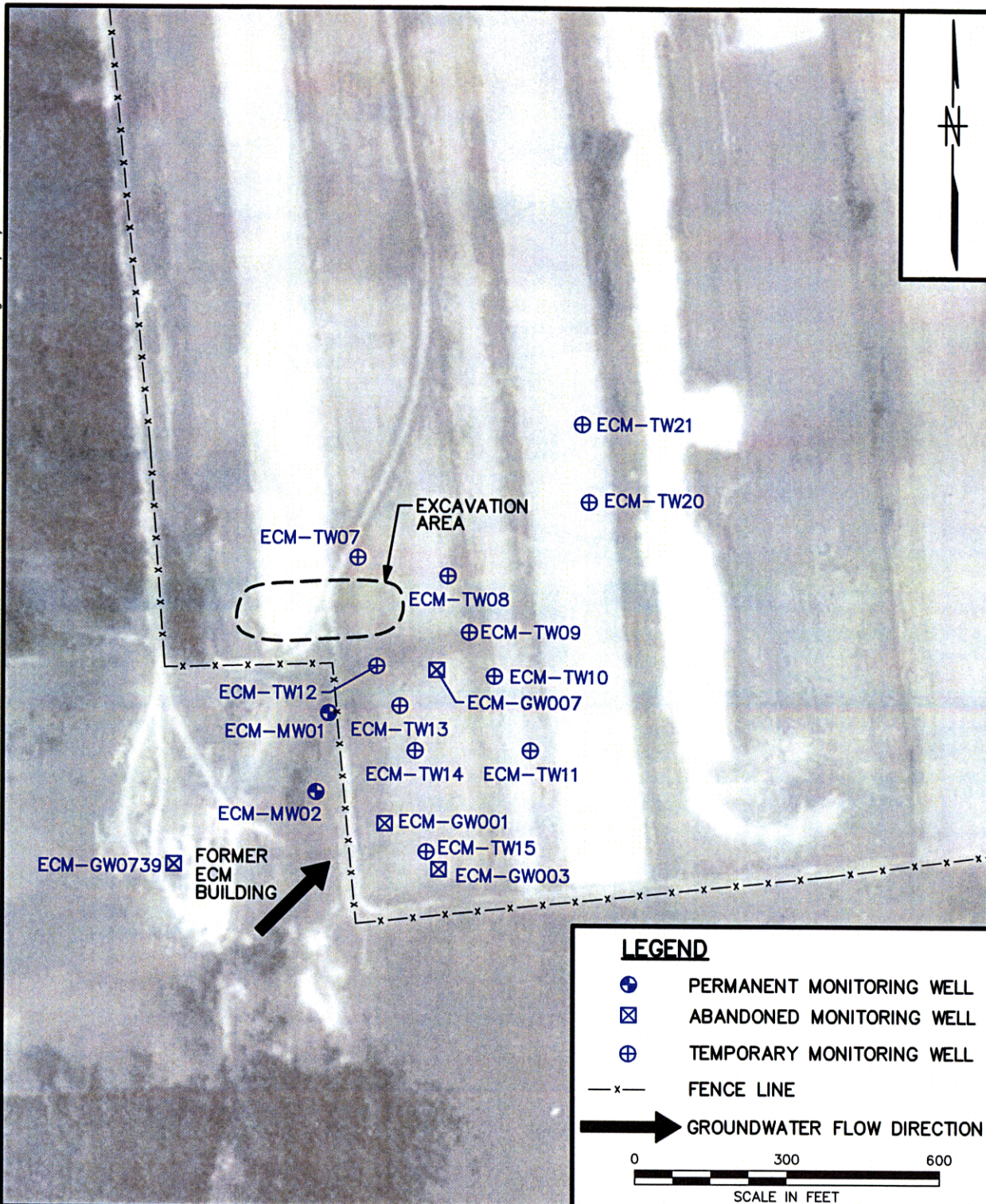
TW21). The locations for the second and third stage wells were based on the results of the previous stages.

Sample designations and depths are provided in Table 3-1. The temporary monitoring well samples were analyzed for Volatile Organic Compounds (VOCs) with 48 hour turnaround times by Ecotest Laboratories Incorporated. Groundwater sample log sheets, monitoring well purge records, and chain of custody forms are presented in Appendix A. Analytical results are presented and discussed in Section 4.0.

The temporary well borings were completed by Delta Well & Pump Incorporated using hollow stem auger (HSA) drilling techniques. Two techniques were used for collecting the groundwater samples, one using temporary well casing and the second using direct push technology (DPT). Groundwater samples were collected from temporary monitoring well ECM-TW07 using the temporary well casing procedure. Based on the time required using a temporary well casing, the DPT procedure was first used on the next boring, and then based on the success in this boring, was used on the remaining borings in the ECM area. Groundwater sample collection details are presented below.

ECM-TW07 was first augered to the total depth of the boring and then a 2-inch diameter well screen and riser pipe was installed inside the augers to the bottom of the boring. The augers were then retracted 5-feet to allow the boring to collapse around the well screen. At this point a submersible pump was lowered into the well screen and the appropriate volume of groundwater was extracted in order to purge the well. The sample was collected directly from the pump outlet. The well casing was removed from the boring and decontaminated. The augers were retracted to five below the water table and then the well casing reinstalled. The pump was again lowered into the well, the well purged, and then a sample collected.

The balance of the groundwater samples (ECM-TW08 through TW13, TW20, and TW21) were collected from temporary well borings using DPT and Hydropunch. The samples were collected on the way down through the boring. At each well point, HSA drilling was completed to a depth approximately 5-feet above the desired sample interval. At this point, the Hydropunch sampler was installed inside the HSAs and driven by a down-hole hammer to a depth 4 to 5-feet below the lead auger. The Hydropunch was then pulled back 1-foot to expose the perforated sample barrel. The sampler was then allowed to sit for approximately 20 minutes to allow sufficient time for groundwater to accumulate in the sampler. The Hydropunch was then removed from the borehole for sample collection. Samples were collected directly from the Hydropunch sampler.



DRAWN BY HJP	DATE 9/27/00	<b>Tetra Tech NUS, Inc.</b>  <b>GROUNDWATER SAMPLE LOCATIONS</b> <b>SITE 9 - ECM AREA</b> <b>PHASE 2 RFI</b> <b>NWIRP CALVERTON</b> <b>CALVERTON, NEW YORK</b>	CONTRACT NO. 3853	OWNER NO. _____
CHECKED BY	DATE		APPROVED BY	DATE
COST/SCHED-AREA			APPROVED BY	DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-1	REV. 0

**TABLE 3-1**  
**SUMMARY OF FIELD SAMPLING PROGRAM**  
**PHASE 2 RFI, NWIRP CALVERTON, NEW YORK**

Well Location	Sample Number	Sample Depths (ft/bgs)
ECM-TW07	ECM-TW07-01-20	55 to 60
	ECM-TW07-02-05	40 to 45
ECM-TW08	ECM-TW08-01-05	43 to 44
	ECM-TW08-02-20	58 to 59
ECM-TW09	ECM-TW09-01-05	43 to 44
	ECM-TW09-02-20	58 to 59
ECM-TW10	ECM-TW10-01-05	43 to 44
	ECM-TW10-02-20	63 to 64
ECM-TW11	ECM-TW11-01-05	48 to 49
	ECM-TW11-02-20	63 to 64
ECM-TW12	ECM-TW12-01-35	34 to 35
	ECM-TW12-02-50	49 to 50
ECM-TW13	ECM-TW13-01-35	34 to 35
	ECM-TW13-02-50	49 to 50
ECM-TW14	ECM-TW14-01-49	48 to 49
	ECM-TW14-02-64	63 to 64
ECM-TW15	ECM-TW15-01-42	41 to 42
	ECM-TW15-02-57	56 to 57
	ECM-TW15-03-00	56 to 57 (duplicate of TW15-02-57)
ECM-TW20	ECM-TW20-45-01	44 to 45
	ECM-TW20-60-01	59 to 60
	ECM-TW20-80-01	79 to 80
	ECM-TW20-100-01	99 to 100
	ECM-TW20-120-01	119 to 120
ECM-TW21	ECM-TW21-45-01	44 to 45
	ECM-TW21-60-01	59 to 60
	ECM-TW21-80-01	79 to 80
	ECM-TW21-100-01	99 to 100
	ECM-TW21-130-01	129 to 130
ECM-MW01	ECM-MW01-0007	40
ECM-MW02	ECM-MW02-0007	42

Ft bgs: Feet below ground surface.

All samples were collected as per the site work plan and Tetra Tech NUS (TtNUS) Standard Operating Procedures (SOPs). When sufficient sample volume was available, field parameters were recorded as noted on the groundwater sample logsheets. Boring and sampling activities were frequently monitored with a Photo-ionization-Device (PID) and readings were also recorded on the sample logsheets. Boring logsheets were completed for each temporary well point. However, the subsurface descriptions were completed by observing the soil cuttings brought to the surface by the HSAs and, due to smearing, may not be accurate. All purge water was collected and transported to the NWIRP Calverton site for temporary storage. All drilling cuttings were spread out at the associated temporary well point. Upon temporary well completion, all borings were backfilled with cement/bentonite grout slurry using tremie pipes from the bottom of the boring to the ground surface.

## 4.0 NATURE AND EXTENT OF CONTAMINATION

### 4.1 ANALYTICAL RESULTS

The ECM area was investigated as a potential source of 1,1,1-trichloroethane (TCA) contaminated groundwater found in an offsite area. In addition, low levels of cadmium may be present in on site groundwater. The results of the current groundwater investigation are presented in Table 4-1. Sample log sheets and chain of custody are provided in Appendix A and laboratory data sheets are presented in Appendix B.

In 1997, on site permanent monitoring wells were sampled to determine if there is significant cadmium groundwater contamination present at the site. The cadmium investigation was conducted because in 1995, a water supply well at the site was tested for metals. Cadmium was detected in a QA/QC sample (duplicate) at approximately twice drinking water standard, but was not detected in the original field sample. Therefore, based on the 1995 data, the presence and concentration of cadmium in the groundwater well was uncertain. Since this potable water supply well was abandoned in 1996 and could not be reevaluated, the two nearest down gradient groundwater monitoring wells were selected for further evaluation. These two monitoring wells were sampled twice, once in June and once in November 1997. Cadmium was not detected in either well during either sample event.

Since off site property access could not be obtained in 1997, evaluation of the VOC-contaminated groundwater was not conducted at that time. Rather, the Navy continued to negotiate with the property owner for access. In 2000, the property changed hands, and property access was granted. In the summer of 2000, groundwater samples were collected as follows, (see Figure 3-1).

- Two shallow permanent monitoring wells located in the ECM area were sampled.
- Nine near offsite temporary monitoring wells were sampled at depths of 5 and 20 feet below the water table (maximum total depth of 64 feet). These wells were located 90 to 400 feet from the ECM area.
- Two far offsite temporary monitoring wells were sampled at depths of 5, 20, 40, 60, and 80 to 90 feet below the water table (maximum total depth of 130 feet). These wells were located over 1000 feet from the ECM Area.

During the 2000 investigation, 30 groundwater samples were collected. TCA, acetone, and carbon disulfide were detected in one well each, see Figure 4-1. TCA was detected at a concentration of 2 ug/l in ECM-TW20, which is less than the New York state drinking water standard of 5 ug/l and the Federal

drinking water standard of 200 ug/l . Acetone and carbon disulfide were detected at concentrations of 18 ug/l and 7 ug/l, respectively, which are also below the drinking water standard of 50 ug/l in New York. In addition, the detections of acetone and carbon disulfide are likely to be laboratory contaminants and may not be present in the site groundwater.

In 1995, temporary onsite monitoring wells near the fence line contained TCA at concentrations up to 35 ug/l and the two onsite permanent monitoring wells were measured to contain TCA at concentrations of 18 ug/l and 25 ug/l. In 1994, the Suffolk County monitoring well ECM-GW07 was measured to contain TCA at a concentration of 75 ug/l. The other off site monitoring wells contained lower concentrations of TCA. As indicated above, the current round of groundwater investigation did not find evidence of VOC contamination throughout the area investigated in 1994 and 1995.

To determine the potential fate of the TCA, the retardation factor for TCA was calculated. The retardation factor is unitless and represents the ratio of groundwater flow velocity to chemical migration velocity. The calculation is based on the seepage velocity of groundwater (speed at which groundwater flows) and the adsorption coefficient for TCA onto saturated soils. Based on the properties of TCA and the aquifer, the retardation is estimated to be 1.94, indicating that TCA should travel at approximately one half the rate of groundwater. Using groundwater elevation mapping conducted in 1997, groundwater flows to the northeast at this site. The location of the near offsite and far offsite wells were selected based on groundwater flow direction from the ECM laboratory and historic groundwater contamination.

Based regional groundwater contours (from 1997) and slug test data from the NWIRP Calverton investigations, the groundwater seepage velocity at the site is estimated to vary from approximately 270 feet per year for the shallow groundwater to 27 feet per year for the intermediate depth groundwater. The corresponding TCA velocities are 135 feet per year and 13.5 feet per year. Therefore, based on the historic analytical data and groundwater and contaminant velocities, the disappearance of TCA at the site cannot be accounted for solely by washout.

The reported half life of TCA in groundwater is approximately 0.73 years via a hydrolysis reaction and 0.4 to 1.5 years via unacclimated aerobic biodegradation (Howard, et al, 1991). A half life is the time required for a chemical concentration to decrease by a factor of 2.0. Based on natural degradation rates a peak TCA concentration of 70 ug/l in 1994 could degrade to a non detected value (1 ug/l) in 2.4 to 9.0 years. These estimated natural degradation rates are consistent with the observed disappearance of TCA at the ECM Area and associated down gradient locations.

TABLE 4-1

**ANALYTICAL RESULTS (ug/l)  
SITE 9 - ECM AREA  
NWIRP CALVERTON, NEW YORK**

<b>Chemical</b>	<b>ECM-TW07-2-5</b>	<b>ECM-TW07-1-20</b>	<b>ECM-TW08-1-5</b>	<b>ECM-TW07-2-20</b>	<b>ECM-TW09-1-5</b>	<b>ECM-TW09-2-20</b>
Date Collected	06-26-00	06-26-00	06-27-00	06-27-00	06-27-00	06-27-00
Sample depth (bwt)	5	20	5	20	5	20
Acetone						
Carbon disulfide						
1,1,1-Trichloroethane						

<b>Chemical</b>	<b>ECM-TW10-1-5</b>	<b>ECM-TW10-2-20</b>	<b>ECM-TW11-1-5</b>	<b>ECM-TW11-2-20</b>	<b>ECM-TW12-1-35</b>	<b>ECM-TW12-2-50</b>
Date Collected	06-28-00	06-29-00	06-29-00	06-29-00	07-17-00	07-17-00
Sample depth (bwt)	5	20	5	20	5	20
Acetone						
Carbon disulfide						
1,1,1-Trichloroethane						

<b>Chemical</b>	<b>ECM-TW13-1-35</b>	<b>ECM-TW13-2-50</b>	<b>ECM-TW14-1-49</b>	<b>ECM-TW14-2-64</b>	<b>ECM-TW15-1-42</b>	<b>ECM-TW15-2-57</b>
Date Collected	07-17-00	07-17-00	07-18-00	07-18-00	07-18-00	07-17-00
Sample depth (bwt)	5	20	5	20	5	20
Acetone						
Carbon disulfide						
1,1,1-Trichloroethane						

<b>Chemical</b>	<b>ECM-TW20-45-1</b>	<b>ECM-TW20-60-1</b>	<b>ECM-TW20-80-1</b>	<b>ECM-TW20-100-1</b>	<b>ECM-TW20-120-1</b>
Date Collected	08-11-00	08-11-00	08-11-00	08-11-00	08-11-00
Sample depth (bwt)	5	20	40	60	80
Acetone				18	
Carbon disulfide					7
1,1,1-Trichloroethane			2		

**TABLE 4-1 (Continued)**  
**ANALYTICAL RESULTS (ug/l)**  
**SITE 9 - ECM AREA**  
**NWIRP CALVERTON, NEW YORK**  
**PAGE 2**

Chemical	ECM-TW21-45-1	ECM-TW21-60-1	ECM-TW21-80-1	ECM-TW21-100-1	ECM-TW21-130-1
Date Collected	08-14-00	08-14-00	08-14-00	08-14-00	08-14-00
Sample depth (bwt)	5	20	40	60	90
Acetone					
Carbon disulfide					
1,1,1-Trichloroethane					

Chemical	ECM-MW01	ECM-MW01	ECM-MW01
Date Collected	06-24-97	11-14-97	07-10-00
Sample depth (bwt)	5	5	5
Acetone	NA	NA	
Carbon disulfide	NA	NA	
1,1,1-Trichloroethane	NA	NA	
Cadmium	ND(2.6)	ND(2.6)	NA

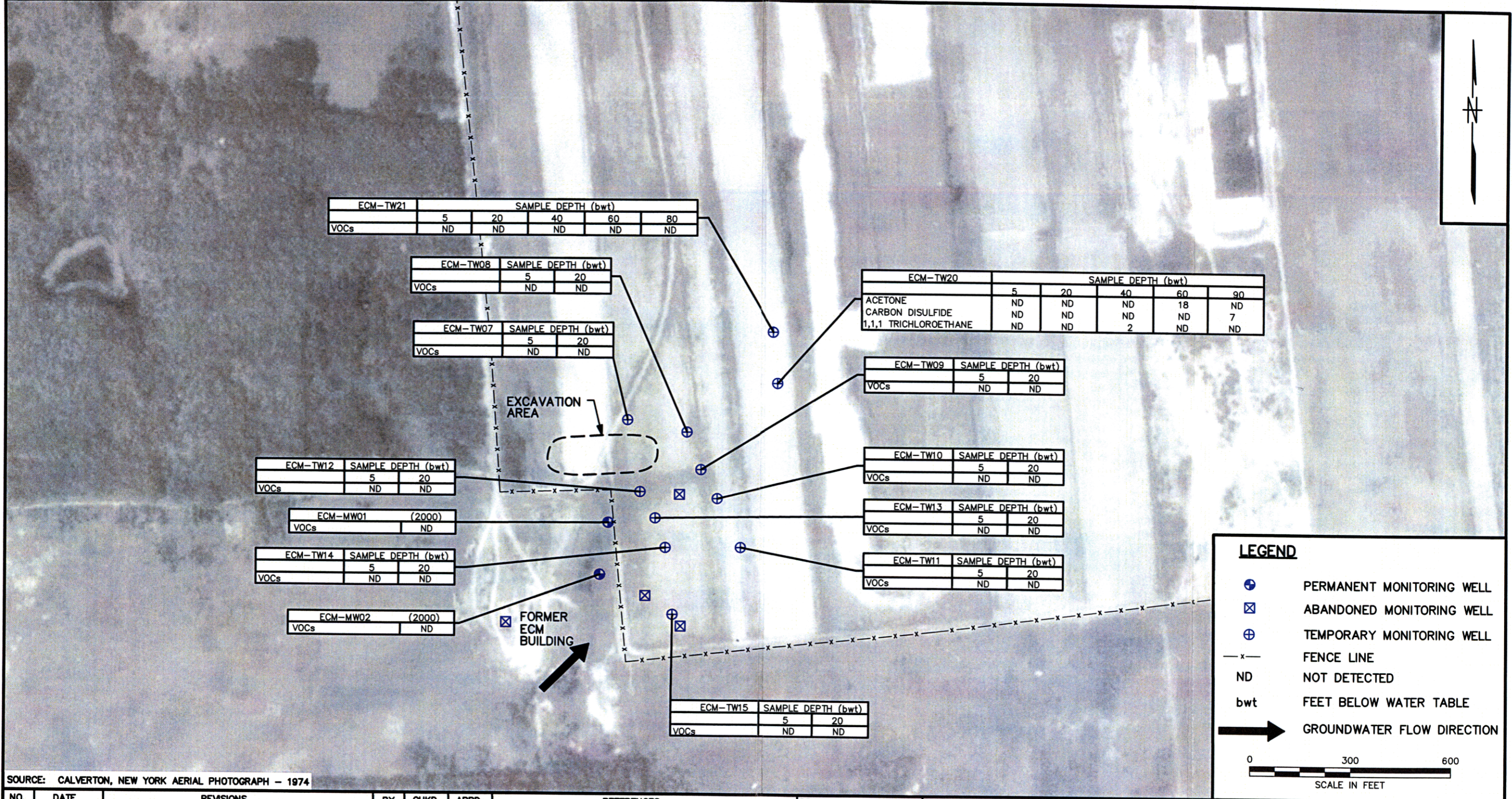
Chemical	ECM-MW02	ECM-MW02	ECM-MW02
Date Collected	06-24-97	11-14-97	07-10-00
Sample depth (bwt)	5	5	5
Acetone	NA	NA	
Carbon disulfide	NA	NA	
1,1,1-Trichloroethane	NA	NA	
Cadmium	ND (2.6)	ND (2.6)	NA

ND (2.6): Not detected at 2.6 ug/l.

NA: Not analyzed

Bwt: Feet below water table.

Blank space: Analyzed but not detected. Detection limit was approximately 1 ug/l for 1,1,1-Trichloroethane.



SOURCE: CALVERTON, NEW YORK AERIAL PHOTOGRAPH - 1974

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	Tetra Tech NUS, Inc.	2000 ANALYTICAL RESULTS (ug/L) SITE 9 - ECM AREA PHASE 2 RFI NWIRP CALVERTON CALVERTON, NEW YORK	CONTRACT NO.	OWNER NO.
							HJP	10/2/00			3853	
							CHECKED BY	DATE			APPROVED BY	DATE
							COST/SCHED-AREA				APPROVED BY	DATE
							SCALE	AS NOTED			DRAWING NO.	REV.
											FIGURE 4-1	0

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

1. Historically, TCA has been found in site groundwater at concentrations greater than New York State drinking water standard of 5 ug/l, but less than Federal drinking water standard of 200 ug/l. The peak measured concentrations of TCA were 190 ug/l in 1990/1991 (ECM-GW007), 70 ug/l in 1994 (ECM-GW007), and 2 ug/l in 2000 (ECM-TW20). In 2000, monitoring wells were installed near ECM-GW007; however, TCA and its breakdown products were not detected in this area at this time.
2. Based on the current results, TCA and its breakdown products are not present at the site or in down gradient areas at concentrations that exceed Federal or state drinking water standards. The likely fate of the historic TCA and related contamination is natural degradation via either biological or chemical reactions.
3. Based on the absence of contamination, no further action is recommended nor warranted at the site.

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**APPENDIX A**  
**FIELD FORMS**

Project Site Name:		<u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW07-2-4</u>	
Project No.:		<u>4570</u>		Sample Location: <u>ECM</u>	
<input type="checkbox"/> Domestic Well Data				Sampled By: <u>JW</u>	C.O.C. No.: _____
<input type="checkbox"/> Monitoring Well Data				Type of Sample:	[X] Low Concentration
<input checked="" type="checkbox"/> Other Well Type:	<u>Temporary monitoring well</u>			<input type="checkbox"/> High Concentration	
<input type="checkbox"/> QA Sample Type:					

SAMPLING DATA:								
Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
6/26/00								
Time: 1328								
Method: submersible pump								

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
6/26/00	0	6.25	111	20.74	196	11.65	83.9	
Method: submersible pump								
Monitor Reading (ppm):	1258	5.79	106	17.03	12.5	11.88	243	
Well Casing Diameter & Material	1305	5.29	103	16.54	0.0	11.32	251	
Type: 2" steel	1310	5.12	104	16.29	1.2	11.31	263	
Total Well Depth (TD): 45	1315	5.02	104	16.28	0.8	11.38	273	
Static Water Level (WL): 37.64	1320	4.94	104	16.33	0.7	11.20	278.5	
One Casing Volume(gal/L): 1.2	1325	4.90	104	16.39	0.0	11.13	280	
Start Purge (hrs): 1253								
End Purge (hrs): 1325								
Total Purge Time (min): 0320								
Total Vol. Purged (gal/L): 32								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOC	—	2 X 40ml	✓

OBSERVATIONS / NOTES:

— purged at 1gpm  
 — sample collected from pump discharge (2" Rediflo pump)  
 — well screen positioned at 40' to 45'

Circle if Applicable:		Signature(s):  <u>Donald Whaler</u>
MS/MSD	Duplicate ID No.:	

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW07-1-60</u>
Project No.: <u>4570</u>		Sample Location: <u>ECM</u>
		Sampled By: <u>DW</u>
<input type="checkbox"/> Domestic Well Data		C.O.C. No.: _____
<input type="checkbox"/> Monitoring Well Data		Type of Sample:
<input checked="" type="checkbox"/> Other Well Type: <u>Temporary Monitoring Well</u>		<input checked="" type="checkbox"/> Low Concentration
<input type="checkbox"/> QA Sample Type: _____		<input type="checkbox"/> High Concentration

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
6/26/00								
Time: 1230								
Method: <u>Submersible Pump</u>								

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other WL
6/26/00								
Method: <u>Submersible pump</u>	0	7.68	176	16.67	136	12.76	75.2	
Monitor Reading (ppm):	1155	7.04	79	16.06	111	12.71	189.2	327'
Well Casing Diameter & Material	200	6.05	73	16.49	7.2	12.61	187.2	
Type: <u>2" steel</u>	205	5.58	72.00	16.16	2.8	13.16	188	
Total Well Depth (TD): <u>60'</u>	210	5.47	72.00	15.71	17.2	13.37	198	
Static Water Level (WL): <u>37.64</u>	1215	5.42	71.00	15.94	14.7	13.05	203	
One Casing Volume(gal/L): <u>3.6</u>	1220	5.40	70.00	15.58	3.6	13.20	209.1	
Start Purge (hrs): <u>1150</u>	1225	5.38	71	15.56	0.6	13.46	215	
End Purge (hrs): <u>1230</u>	1230	5.38	70	15.55	2.0	13.45	220	
Total Purge Time (min): <u>40</u>								
Total Vol. Purged (gal/L): <u>48</u>								

Analysis	Preservative	Container Requirements	Collected
VOA	—	2x 40ml	✓

**OBSERVATIONS / NOTES:**  
  
 1150 start at 2.5 gpm } 12.5 gal  
 1155 reduce to 1 gpm }  
 - sample collected from pump discharge  
 - well screen positioned at 55'-60'

Circle if Applicable:		Signature(s):  Donald Whalen
MS/MSD	Duplicate ID No.:	

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW08-1-</u>
Project No.: <u>4570</u>		Sample Location: _____
<input type="checkbox"/> Domestic Well Data <input type="checkbox"/> Monitoring Well Data <input checked="" type="checkbox"/> Other Well Type: <u>Temp. Monitoring well</u> <input type="checkbox"/> QA Sample Type: _____		Sampled By: <u>DW</u> C.O.C. No.: _____ Type of Sample: <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration

SAMPLING DATA:								
Date: <u>6/27/00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>0854</u>								
Method: <u>Hydro punch</u>	<u>1.8vv</u>	<u>6.26</u>	<u>74</u>	<u>22.1</u>	<u>446</u>	<u>8.62</u>	<u>63.2</u>	

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis <u>VOC</u>	Preservative <u>—</u>	Container Requirements <u>2x40ml</u>	Collected <u>✓</u>

OBSERVATIONS / NOTES:
<p>- Hydro punch screen at 45.5'-47.5' bgs</p>

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	<u>Donald Weber</u>

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW08-2-6#</u>	
Project No.: _____		Sample Location: _____	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>DW</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____	
<input checked="" type="checkbox"/> Other Well Type: <u>hydropunch</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>6/27/00</u>								
Time: <u>0955</u>								
Method: <u>Hydropunch</u>	<u>1. Brn</u>	<u>6.57</u>	<u>78</u>	<u>20.04</u>	<u>1170</u>	<u>8.01</u>	<u>66</u>	

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
<u>VOC</u>	<u>—</u>	<u>2x 40ml</u>	<u>✓</u>

OBSERVATIONS / NOTES:
<u>Hydropunch screen at 63' - 64' bgs</u>

Circle if Applicable:		Signature(s): <u>Donald K. Huber</u>
<input type="checkbox"/> MS/MSD	<input type="checkbox"/> Duplicate ID No.:	

**Project Site Name:**

NWIRP Calverton

**Sample ID No.:**

ECM-TW09-1-05

**Project No.:**

**Sample Location:**

**Sampled By:**

D. Whalen

## Domestic Well Data

C.O.C. No.:

Type of Sam

## Monitoring Well Data

**Type of Sample:**

☒ Other Well Type:

hydropunch

**[X] Low Concentration**

QA Sample Type:

**High Concentration**

**SAMPLING DATA:**

Date: 6/27/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1425	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	Color NA
Method: Hydros punch	14. Brn	6.21	203	22.97	1132	4.17	-37.3	+BET
SOURCE DATA: sandy								

**PURGE DATA:**

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

Hydroponic screen at 43'-44' bgs

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

David Wilson

[illegible]

Project Site Name: NWIRP Calverton

Project No.: \_\_\_\_\_

☐ Domestic Well Data

☐ Monitoring Well Data

☒ Other Well Type: hydrofracture

☐ QA Sample Type: \_\_\_\_\_

Sample ID No.: ECM-TW10-1-

Sample Location: \_\_\_\_\_

Sampled By: DW

C.O.C. No.: \_\_\_\_\_

Type of Sample:

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 6/28/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 0940	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydrosnatch	Gray-Brn	6.11	98	18.59	607	8.29	30.1	

**PURGE DATA:**

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

Hydropunch screen at 48'-49' bgs

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	<i>Donald White</i>

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW10-2-</u>	
Project No.: _____		Sample Location: _____	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>DW</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____	
<input checked="" type="checkbox"/> Other Well Type: <u>Hydropunch</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
<u>6/28/00</u>	<u>gray brown</u>	<u>6.11</u>	<u>71.0</u>	<u>16.52</u>	<u>1214</u>	<u>8.60</u>	<u>-6.2</u>	
<u>1030</u>								
Method: <u>Hydropunch</u>								

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
<u>VOC</u>	<u>—</u>	<u>2x40ml</u>	<u>✓</u>

OBSERVATIONS / NOTES:
<u>Hydropunch screen at 63'-64' bgs</u>

Circle if Applicable:		Signature(s):  <u>Donald Whalen</u>
<input type="checkbox"/> MS/MSD	<input type="checkbox"/> Duplicate ID No.:	

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW11-1-0</u>	
Project No.: _____		Sample Location: _____	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>DW</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____	
<input checked="" type="checkbox"/> Other Well Type: <u>hydropunch</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>6-28-00</u>								
<u>1348</u>								
Method: <u>Hydropunch</u>	<u>14.3rv</u>	<u>6.22</u>	<u>91</u>	<u>21.43</u>	<u>419</u>	<u>6.07</u>	<u>-48.3</u>	

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:
<u>Hydropunch screen at 48'-49' bgs</u>

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	<u>Donald Wilkins</u>



## GROUNDWATER SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: ENWIRP Calverton  
Project No.: \_\_\_\_\_

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type: hydro punch  
☐ QA Sample Type: \_\_\_\_\_

Sample ID No.: ECM-TW11-2-20  
Sample Location: \_\_\_\_\_  
Sampled By: DW  
C.O.C. No.: \_\_\_\_\_  
Type of Sample:  
☒ Low Concentration  
☐ High Concentration

## SAMPLING DATA:

Date: <u>6/28/00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1435</u>	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: <u>hydro punch</u>	<u>lt. Brn</u>	<u>6.64</u>	<u>107</u>	<u>22.41</u>	<u>1249</u>	<u>10.68</u>	<u>41.6</u>	

## PURGE DATA:

Date: _____	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: _____								
Monitor Reading (ppm): _____								
Well Casing Diameter & Material Type: _____								
Total Well Depth (TD): _____								
Static Water Level (WL): _____								
One Casing Volume(gal/L): _____								
Start Purge (hrs): _____								
End Purge (hrs): _____								
Total Purge Time (min): _____								
Total Vol. Purged (gal/L): _____								

## SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOC</u>	<u>—</u>	<u>2 x 40 ml</u>	<u>✓</u>

## OBSERVATIONS / NOTES:

Hydropunch screen at 63'-64' bgs

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

Donald Whalen



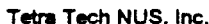
Project Site Name: NWIAP Culverton		Sample ID No.: ECM-TW12-02-50	
Project No.: 7398		Sample Location: ECM Area	
<input type="checkbox"/> Domestic Well Data		Sampled By: Vince Shickord	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.:	
<input checked="" type="checkbox"/> Other Well Type: Temporary Well		Type of Sample:	
<input type="checkbox"/> QA Sample Type:		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA:									
Date: 7-17-00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA	
Time: 1035	cloudy	6.26	30.9	17.0	210	8.4	200	-	
PURGE DATA:									
Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other	
Method:									
Monitor Reading (ppm): 0									
Well Casing Diameter & Material									
Type:									
Total Well Depth (TD):									
Static Water Level (WL):									
One Casing Volume(gal/L):									
Start Purge (hrs):									
End Purge (hrs):									
Total Purge Time (min):									
Total Vol. Purged (gal/L):									

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:	
-Hydropunch Sampler set at depth of 50 feet BGS. This is approximately 20 feet below water table of 30 feet BGS.	
- No odors, stains, or elevated PID readings observed	

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	



## Page of

**Project No.:**

NWIRP Calverton  
7398

Sample Location: ECM Area

Sampled By: Vince Shickor A

C.O.C. No.:

**Type of Sample:**

☒ Low Concentration

**High Concentration**

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type:  
☐ QA Sample Type:

### Temporary Well

**SAMPLING DATA:**

Date: 7-17-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1346	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydrobench	cloudy	5.94	48.5	20.1	750	6.7	176	-

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): <i>0</i>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch Sampler set at depth of 35 feet BGS. This is roughly 5 feet below water table of 30 feet BGS.
- No odors, skins, or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

LA 15

Project Site Name: <u>DWIRP Culverton</u>		Sample ID No.: <u>ECM-TW13-02-50</u>	
Project No.: <u>7398</u>		Sample Location: <u>ECM Area</u>	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>Vince Shickert</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____	
<input checked="" type="checkbox"/> Other Well Type: <u>Temporary well</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>7-17-00</u>	<u>very cloudy</u>	<u>6.71</u>	<u>51.1</u>	<u>20.7</u>	<u>979</u>	<u>7.3</u>	<u>251</u>	<u>-</u>
Time: <u>1435</u>								
Method: <u>Hydropunch</u>								

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
<u>N/A</u>								
Method:								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml vials (x2)</u>	<u>2</u>

OBSERVATIONS / NOTES:
<u>Hydropunch Sampler set at depth of 50 feet BGS. This is approximately 20 feet below water table of 30 feet BGS.</u>
<u>- no odors, stains, or elevated PID readings observed</u>

Circle if Applicable:		Signature(s):
MS/MSD <u>—</u>	Duplicate ID No.: <u>      </u>	<u>[Signature]</u>

Project Site Name: NWIRP Clifton  
Project No.: \_\_\_\_\_

Sample ID No.: ECM-TW14-81-49

Sample Location: ECM Area

Sampled By: Vince Shuckora

**C.O.C. No.:**

**Type of Sample:**

☒ Low Concentration

### High Concentration

## Domestic Well Data

## Monitoring Well Data

☒ Other Well Type: Temporary well

**QA Sample Type:**

**SAMPLING DATA:**

Date: 7-18-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1245	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: hydronarch	Very cloudy	6.11	45.3	18.3	>990	7.3	141	

**PURGE DATA:**

[illegible]

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

Hydropunch Sampler set at depth of 49 feet B.G.S. This is 5 feet below water table of 44 feet B.G.S.

-No odors, stains or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

*[Handwritten signature]*

Project Site Name: <u>NWIAP Calverton</u>		Sample ID No.: <u>ECM-TW14-02-64</u>	
Project No.: <u>7398</u>		Sample Location: <u>ECM Area</u>	
<input type="checkbox"/> Domestic Well Data <input type="checkbox"/> Monitoring Well Data <input checked="" type="checkbox"/> Other Well Type: <u>Temporary Well</u> <input type="checkbox"/> QA Sample Type:		Sampled By: <u>Vince Shickora</u> C.O.C. No.: Type of Sample: <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date: <u>7-18-00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>1325</u>	<u>Very cloudy</u>	<u>6.69</u>	<u>48.4</u>	<u>18.7</u>	<u>&gt;990</u>	<u>6.1</u>	<u>115</u>	
Method: <u>Hydropunch</u>								

PURGE DATA:								
Date: <u>7-18-00</u> <u>VAS</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: <u>N/A</u>								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume (gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml Vials (X2)</u>	<u>2</u>

OBSERVATIONS / NOTES:  

Hydropunch Sampler set at depth of 64 Feet BES. This is 20 feet below water table of 44 Feet BES

No odors, stains or elevated PID readings observed

Circle if Applicable:		Signature(s):  <u>[Signature]</u>
MS/MSD <u>  </u>	Duplicate ID No.: <u>  </u>	



Project Site Name: <u>NWIRP Culverton</u>		Sample ID No.: <u>ECM-TWIS-02-57</u>
Project No.: <u>7398</u>		Sample Location: <u>ECM Area</u>
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>Vince Shickel</u>
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____
<input checked="" type="checkbox"/> Other Well Type: <u>Temporary well</u>		Type of Sample:
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration
		<input type="checkbox"/> High Concentration

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>7-18-00</u>								
Time: <u>0955</u>								
Method: <u>Hydropunch</u>		<u>6.25</u>	<u>38.5</u>	<u>19.1</u>	<u>&gt;99c</u>	<u>8.6</u>	<u>158</u>	<u>-</u>

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
<u>N/A</u>								
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

Analysis	Preservative	Container Requirements	Collected
<u>KOCS</u>	<u>HCl</u>	<u>40 ml vials (x2)</u>	<u>2 (initials)</u> <u>4</u>

<p>- Hydropunch Sampler set at depth of 57 feet BGS. This is approximately 20 feet below water table of 37 feet BGS.</p>
--

Circle if Applicable:		Signature(s):
MS/MSD <u>-</u>	Duplicate ID No.: <u>ECM-TWIS-03-00</u>	<u>[Signature]</u>

Project Site Name: NWERP CALVERTON  
Project No.: 7398

Sample ID No.: 56m-7620-120-01

Sample Location: ECM - TW 20

Sampled By: ROBERT GOOD

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

## Domestic Well Data

## Monitoring Well Data

Other Well Type: TEMPORARY WELL BORING

QA Sample Type: \_\_\_\_\_

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1340	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: HYDROPAUCH				NA				

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 120 FT BELOW SURFACE IN BORING ECM - TW20. INSUFFICIENT WATER VOLUME FOR FIELD MEASUREMENTS.

NO ORDERS OR RID. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Rebut 8/11/00

BD:	To Be Determined
-----	------------------

A-19

Project Site Name: NWIRP CALVERTON  
Project No.: 7398

Sample ID No.: ECM-TW20-100-01

Sample Location: ECM - TW20

Sampled By: ROBERT GOON

C.O.C. No.: \_\_\_\_\_

☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type: TEMPORARY WELL BORING  
☐ QA Sample Type:

Type of Sample: \_\_\_\_\_

☒ Low Concentration

**High Concentration**

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1235	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP (V)	
Method: Hydrospace	Bar	6.51	180	20.2	3200	14.20	-40	

**PURGE DATA:**

Date: <u>— NA —</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 100 FT BELOW SURFACE  
IN BORING ECM - TW20

NO ODORS OR P.T.D. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Robt 8/11/00

### 13D: to Be Determined

A-20

Project Site Name: NWIRP CALVERTON  
Project No.: 7398

Sample ID No.: ECM-TW20-80-01

Sample Location: ECM-TW20

Sampled By: ROBERT GOOD

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type: TEMPORARY WELL BORING  
☐ QA Sample Type:

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1122	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP mV	
Method: HACH DR/9000	Clear	6.80	174	21.2	3240	15.40	-46	

**PURGE DATA:**

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 80 FT BELOW SURFACE IN BORING ECM-TW 20.

NO ODORS OR P.T.D. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

**Signature(s):**

MS/MSD

**Duplicate ID No.:**

256, 8/11/00

TBD: To Be Determined

Project Site Name:		NWIRP CALVERTON							
Project No.:		7398							
<input type="checkbox"/> Domestic Well Data									
<input type="checkbox"/> Monitoring Well Data									
<input checked="" type="checkbox"/> Other Well Type:		TEMPORARY WELL BORING							
<input type="checkbox"/> QA Sample Type:									
Sample ID No.:		ECM-TW20-60-01							
Sample Location:		ECM-TW20							
Sampled By:		ROBERT GOOD							
C.O.C. No.:									
Type of Sample:		<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration							
SAMPLING DATA:									
Date:	8-11-00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	TBD ORP mv	TBD
Time:	1020	BWV	6.44	189	21.1	1348	15.5	-43	
Method:		HYDRA PUNCH							
PURGE DATA:									
Date:	N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:									
Monitor Reading (ppm):									
Well Casing Diameter & Material Type:									
Total Well Depth (TD):									
Static Water Level (WL):									
One Casing Volume(gal/L):									
Start Purge (hrs):									
End Purge (hrs):									
Total Purge Time (min):									
Total Vol. Purged (gal/L):									
SAMPLE COLLECTION INFORMATION:									
Analysis		Preservative		Container Requirements				Collected	
VOL		HCL		2 x 40 ml vials				2	
OBSERVATIONS / NOTES:									
HYDRA PUNCH SAMPLER DRIVEN TO & OPEN AT 60 FT BELOW SURFACE IN BOREHOLE ECM - TW 20.									
NO ODDORS OR PID READINGS ABOVE BACKGROUND									
Circle if Applicable:									
MS/MSD		Duplicate ID No.:							
						Signature(s): JRS L 8/11/00			

**TBD: To Be Determined**

Project Site Name: NWIRP CALVERTON  
Project No.: 7398

Sample ID No.: ECM-TW20-45-01

Sample Location: ECM - TW 20

Sampled By: ROBERT GOOD

C.O.C. No.: \_\_\_\_\_

☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type: TEMPORARY WELL BORING  
☐ QA Sample Type:

Type of Sample: \_\_\_\_\_

☒ Low Concentration

**High Concentration**

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	<del>TBD</del>	TBD
Time: 0430	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP (mV)	
Method: 144780 PWT-14	BRN	6.46	174	22.0	2900	15.10	-47	

**PURGE DATA:**

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO, AND OPEN AT 45 FT. BELOW SURFACE IN BORING  
ECM - TW 20

NO ODORS OR PID. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Pat L. 8/14/00

**TBD: To Be Determined**

Project Site Name: NWIRP Culverton  
Project No.: 7398

Sample ID No.: ECM-TW21-13E-01

Sample Location: ECM Area

Sampled By: Vince Shickora

C.O.C. No.:

**Type of Sample:**

## Domestic Well Data

**Monitoring Well Data**

\* Other Well Type: Temporary Well

QA Sample Type:

~~Low Concentration~~

☐ High Concentration

**SAMPLING DATA:**

Date: 8-15-00	Color	pH	S.C.	Temp.	Turbidity	DO	FBD	FBD
Time: 0925	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydro punch	very cloudy	8.79	259	16.40	1644	1.93	20.4	0.0

**PURGE DATA:**

Date: <b>DA</b>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <b>0</b>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch Sampler set at depth of 130 feet B.G.S. for sampling. (unsuccessful sample attempts, due to lack of recovery, made at 120 ft and 125 ft. BGS)
- No odors, stains, or elevated PID readings observed.

**Circle if Applicable:****MS/MSD**

**Duplicate ID No.:**

**Signature(s):**

CHAS

TBD: To Be Determined

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECA-TW21-45-01</u>	
Project No.: <u>7398</u>		Sample Location: <u>ECM Area</u>	
		Sampled By: <u>Vince Shuckora</u>	
<input type="checkbox"/> Domestic Well Data <input type="checkbox"/> Monitoring Well Data <input checked="" type="checkbox"/> Other Well Type: <u>Temporary Well</u> <input type="checkbox"/> QA Sample Type:		C.O.C. No.: Type of Sample: <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

SAMPLING DATA:								
Date: <u>8-14-00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: <u>1115</u>	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: <u>Hydropunch</u>	<u>*Yeloney (insufficient volume recovered for field measurements)</u>							

PURGE DATA:								
Date: <u>N/A</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:	<div style="border: 1px solid black; width: 100%; height: 100%; transform: rotate(45deg); position: relative;"> <span style="position: absolute; top: 0; left: 0; right: 0; bottom: 0;"></span> </div>							
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
<u>VCCs</u>	<u>HCl</u>	<u>40 ml Vials (x2)</u>	<u>2</u>

**OBSERVATIONS / NOTES:**  
 - Hydropunch sampler set at depth of 45 feet B.G.S.  
 - No odors, stains, or elevated PID readings observed

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	

**TBD: To Be Determined**

A-25

Project Site Name: NWIRP Colverton  
Project No.: 7398

Sample ID No.: ECM-Tw21-60-c1

Sample Location: ECM Area

Sampled By: Vince Shuckera

C.O.C. No.: \_\_\_\_\_

**Type of Sample:**

☒ Low Concentration

**High Concentration**

## Domestic Well Data

## Monitoring Well Data

☒ Other Well Type: Temporary well

QA Sample Type:

**SAMPLING DATA:**

Date: 8-14-00	Color	pH	S.C.	Temp.	Turbidity	DO	<del>TBD</del>	<del>TBD</del>
Time: 1225	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydropunch	Very cloudy	9.13	253	16.84	1345	5.13	-38.4	0.0

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <i>0</i>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch sampler set at depth of 60 feet B.G.S.
- No odors, stains, or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

*[Handwritten signature]*

TBD: To Be Determined

A-26

Project Site Name: NWIRP Celverton

Project No.: 7398

## Domestic Well Data

## Monitoring Well Data

☒ Other Well Type: Temporary Well

QA Sample Type:

Sample ID No.: ECM-TW24-80-21

Sample Location: E.C.M Area

Sampled By: Vince Shickora

C.O.C. No.:

**Type of Sample:**

~~Low Concentration~~

☐ High Concentration

**SAMPLING DATA:**

Date: 8-14-00	Color	pH	S.C.	Temp.	Turbidity	DO	FDB	TDB
Time: 1440	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydropunch	Very cloudy	7.81	145	16.60	1106	4.16	-70.2	0.0

**PURGE DATA:**

Date: <b>NA</b>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <b>0</b>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch Sampler set at depth of 80 feet B.G.S.
- No odors, stains, or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

W. A. R.

BD: To Be Determined

A-27



**BORING LOG**

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NUIRP Calverton  
3798  
DELTA

BORING NUMBER: TW07  
DATE: 6/26/00  
GEOLOGIST: D. Whalen  
DRILLER:

Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn	F-mgr sand, silty sand pebbles and gravel		damp				
	5.0					lt. Brn	FGR sand, some MGR + tr. silt		damp				
0954	8.0					lt. Brn	F-mgr sand			0	0	0	0
	15.0						FGR to CGR sand + tr. silt			0	0	0	0
1000	25.0												
1002	30.0									0	0	0	0
1010	35.0						FGR-mgr sand + tr. silt		moist				
1012	40.0									0	0	0	0
	50.0									0	0	0	0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" I.D. HSA 0' to 60'; soils logged from auger cuttings.

Drilling Area  
Background (ppm): 0.0

Converted to Well: Yes ☐ No ☒ Well I.D. #: \_\_\_\_\_

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NWFP Calverton  
4570 3798  
Delta

BORING NUMBER: TW 07  
DATE: 6-26  
GEOLOGIST: R. Whalen  
DRILLER:

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area  
Background (ppm):

**Converted to Well:**

**Yes**

**No**

Well I.D. #:

A-30

**BORING LOG**

PROJECT NAME: NWIRP Calverton BORING NUMBER: ECM-TW08  
 PROJECT NUMBER: 3798 DATE: 6/26/00 and 6/27/00  
 DRILLING COMPANY: Delta GEOLOGIST: D. Whalen  
 DRILLING RIG: \_\_\_\_\_ DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
1429		/				BRN	Gravly in silty FGR to CGR sand		Dry				
		/				Light brown	FGR to CGR sand		Damp				
1445	5.0	/				BRN	tr. silt, some pebbles						
		/				Light BRN				0	0	0	0
1448	10.0	/											
		/											
	15.0	/											
		/											
54	20.0	/								0	0	0	0
		/											
	25.0	/											
		/											
	30.0	/								0	0	0	0
		/											
6/27 0809	35.0	/											
		/											
	40.0	/								0	0	0	0
		/											
0814	45.0	/							✓				
		/											
	50.0	/				✓	✓			0	0	0	0

\* When rock coring, enter rock brokenness.

include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" ID HSA 0' to 60'; soils logged from  
auger cuttings

Drilling Area  
 Background (ppm):

Converted to Well: Yes ☐ No ☒ Well I.D. #: \_\_\_\_\_

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NWIRP Calverton  
4570  
Delta

BORING NUMBER: ECM-two 8  
DATE: 6-27-00  
GEOLOGIST: D. Whalen  
DRILLER: \_\_\_\_\_

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: \_\_\_\_\_

Drilling Area  
Background (ppm):

Converted to Well:      Yes                      No                      ✓                      Well I.D. #:

**BORING LOG**

PROJECT NAME: NWIRP Calverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: DELTA  
 DRILLING RIG: \_\_\_\_\_

BORING NUMBER: ECM-TW09  
 DATE: 6-27-09  
 GEOLOGIST: D. Whalen  
 DRILLER: \_\_\_\_\_

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole*	Driller BZ*
1314						BEN	Silty FGR-CGR sand some gravel		Dry				
						↓	↓		Damp				
						Lt. BEN	FGR to CGR sand + v. silty, some pebbles						
	10.0									0	0	0	0
	20.0									0	0	0	0
	30.0									0	0	0	0
	40.0								✓ wet	0	0	0	0
	50.0					✓	✓		✓	0	0	0	0

\* When rock coring, enter rock brokenness.

Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3 1/4" HSA to 55'; soils logged from drill cuttings

Drilling Area

Background (ppm): 0

Converted to Well:

Yes

No

✓

Well I.D. #:

A-33

**PROJECT NAME:**

NWIRP Galveston

BORING NUMBER: ECM-Two9

PROJECT NUMBER:

DATE:

6-27-00

**DRILLING COMPANY:**

DEATH

**GEOLOGIST:**

D. whales

**DRILLING RIG:**

**DRILLER:**

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

### Drilling Area

Background (ppm): 0

**Converted to Well:**

**Yes**

**No**

✓

Well I.D. #:

A-34

**BORING LOG**PROJECT NAME: NWIRP CalvertonBORING NUMBER: ECM-TW10PROJECT NUMBER: 7398DATE: 6-28-00DRILLING COMPANY: DeltaGEOLOGIST: D. Whalen

DRILLING RIG:

DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
0753						BRN	Silty FGR to CGR sand some gravel						
						↓	↓		Dune				
0756	5.0					Light BRN	FGR to CGR sand, some pebbles, tr. silt						
	10.0											0	0
	20.0											0	0
	30.0											0	0
0820	40.0											0	0
	50.0											0	0

\*When rock coring, enter rock brokenness.

\*Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3 1/4" I.D. HSA 0' to 60'; soils logged from auger cuttings

Drilling Area

Background (ppm): 0.0Converted to Well: Yes          No         Well I.D. #:

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NWIRP Calverton  
7398  
DE/19

BORING NUMBER: tw10  
DATE: 6/28/00  
GEOLOGIST: D. Whalen  
DRILLER: \_\_\_\_\_

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

Drilling Area  
Background (ppm):

Converted to Well:      Yes                      No                      Well I.D. #:

A-36

**BORING LOG**

PROJECT NAME:

NWIRP Calverton

BORING NUMBER:

ECM-TW11

PROJECT NUMBER:

7398

DATE:

6-28-00

DRILLING COMPANY:

Delta

GEOLOGIST:

P. Whalen

DRILLING RIG:

DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/ Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole**	Driller BZ**
1239						BRN	Silty FGR sand some Gravel		Dry				
	5.0					Light BRN	FGR to CGR sand some pebbles, tr. silt		Damp				
	10.0									0	0	0	0
	15.0												
	20.0									0	0	0	0
	25.0												
	30.0									0	0	0	0
	35.0												
	40.0									0	0	0	0
	45.0								✓				
1309	45.0												
	50.0									0	0	0	0

\* When rock coring, enter rock brokenness.

† Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3 1/4" I.D. HSA 0' to 60'; soils logged from auger cuttings

Drilling Area

Background (ppm): 0

Converted to Well:

Yes

No

Well I.D. #:

PROJECT NAME:  
PROJECT NUMBER:  
DRILLING COMPANY:  
DRILLING RIG:

NWIRP Calverton  
7398  
Delta

BORING NUMBER: ECM-TW11  
DATE: 6-28-00  
GEOLOGIST: D. Whalen  
DRILLER:

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks:

**Drilling Area**  
**Background (ppm):**

Converted to Well: Yes

**No**

Well I.D. #:



Tetra Tech NUS, Inc.

**BORING LOG**Page 1 of 2 <sup>DOB 10:</sup>

PROJECT NAME: NWIRP Calverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: Delta Well & Pump  
 DRILLING RIG: Felling F-10

BORING NUMBER: ECM-TW 12  
 DATE: 7-17-00  
 GEOLOGIST: Vince Shickora  
 DRILLER: Mike Pelligrino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PDM/PD Reading (ppm)			
					Soil Density Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
<u>Tr</u>												
<u>0870</u>	<u>0</u>	<u>/</u>				<u>Brown - mixture of silt,</u>		<u>(damp)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>/</u>				<u>Sand and pebble/gravel</u>						
<u>0844</u>	<u>5</u>	<u>/</u>				<u>size quartz</u>						
		<u>/</u>				<u>Brown - Fine to medium</u>		<u>(moist)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0849</u>	<u>10</u>	<u>/</u>				<u>grain sand with some</u>						
		<u>/</u>				<u>quartz pebbles</u>						
<u>0852</u>	<u>15</u>	<u>/</u>										
		<u>/</u>				<u>Light Brown - Tan fine to</u>						
<u>0854</u>	<u>20</u>	<u>/</u>				<u>medium grain sand with</u>		<u>(moist)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>/</u>				<u>some quartz pebbles</u>						
<u>7</u>	<u>25</u>	<u>/</u>										
		<u>/</u>				<u>Same as above</u>		<u>(moist)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0901</u>	<u>30</u>	<u>/</u>										
<u>0945</u>		<u>/</u>		<u>GW</u>		<u>Same as above</u>		<u>(wet at 2.30' BGS)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0948</u>	<u>35</u>	<u>/</u>										
		<u>/</u>										
<u>0951</u>	<u>40</u>	<u>/</u>				<u>Same as above</u>		<u>(wet)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>/</u>										
<u>0955</u>	<u>45</u>	<u>/</u>				<u>Same as above</u>		<u>(wet)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>/</u>										
	<u>50</u>	<u>/</u>										
		<u>/</u>										
	<u>55</u>	<u>/</u>		<u>FOB</u>								
		<u>/</u>										
		<u>/</u>										
		<u>/</u>										

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" X 5" HSA to Total Depth
 Drilling Area  
 Background (ppm): 0
~~Descriptions completed by observing cuttings brought to surface by Augers and may not be accurate~~

 Converted to Well: Yes      No X Well I.D. #:

**BORING LOG**PROJECT NAME: NWIRP CulvertBORING NUMBER: ECM-TW13PROJECT NUMBER: 7398DATE: 7-17-00DRILLING COMPANY: Delta Well + PumpGEOLOGIST: Vince ShickoraDRILLING RIG: Falling F-10DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PID/FID Reading (ppm)			
						Soil Density/Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
1244		0	/				Brown - Silt-Sand-Quartz pebbles and Gravel		(damp)	0	0	0	0
1246		5	/				Light Brown-Tan fine to medium grain Sand (some quartz pebbles)		(moist)	0	0	0	0
1252		10	/										
1257		15	/				Same as above		(moist)	0	0	0	0
1301		20	/				Same as above		(moist)	0	0	0	0
1304		25	/										
1307		30	/				Same as above		wet at 230' BGS	0	0	0	0
1356		35	/				Same as above		wet	0	0	0	0
1359		40	/				Same as above		wet	0	0	0	0
1402		45	/				Same as above		wet	0	0	0	0
1405		50	/										
		55	/		EOB								

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" X 5' HSA

Drilling Area

Background (ppm): 0Descriptions completed by observing cutting brought to surface by Augers and may not be accurate

Converted to Well:

Yes

No

☒

Well I.D. #:

**BORING LOG**

PROJECT NAME: NWIAP Calverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: Delta well & Pump  
 DRILLING RIG: Felling F-10

BORING NUMBER: ECM-TW14  
 DATE: 7-18-00  
 GEOLOGIST: Vince Shickel  
 DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION			U S C S	Remarks	PID/FID Reading (ppm)			
						Soil Density Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole	Driller BZ
1134		0	/					Brown-Silt/Sand/Pebbles		dry	0	0	0	0
		5	/					Brown-Ten Fine to Medium grain Sand (with some quartz pebbles)		moist	0	0	0	0
1137		10	/											
1141		15	/					Same as above		moist	0	0	0	0
1144		20	/					Same as above		moist	0	0	0	0
1148		25	/					Same as above		moist	0	0	0	0
1152		30	/					Same as above		moist	0	0	0	0
1156		35	/					Same as above		moist	0	0	0	0
1200		40	/					Same as above		moist	0	0	0	0
1210		45	/					Same as above		wet at 44' BGS				
1255		50	/					Same as above		wet	0	0	0	0
1259		55	/					Same as above		wet	0	0	0	0
		60	/											

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" x 5' HSA to total depth

Drilling Area

Background (ppm): 0Descriptions conducted by observing cuttings brought to surface by augers and may not be accurate

Converted to Well:

Yes

No

X

Well I.D. #:

PROJECT NAME: NWIRP Culverton  
PROJECT NUMBER: 7398  
DRILLING COMPANY: Delta Well & Pump  
DRILLING RIG: Fallins F-10

BORING NUMBER: ECM-TW15  
DATE: 7-18-00  
GEOLOGIST: Vince Shuter  
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S .	Remarks	PIOPID Reading (ppm)				
						Soil Density Consistency or Rock Hardness	Color Material Classification			Sample	Sampler B2	Boothole	Driller B2	
0743		0	/				Brown - Silt - Sand - Pebbles		(damp)	0	0	0	0	
0747		5	/				Light Brown - Tan Fine to Medium grain Sand with some quartz pebbles		Moist	0	0	0	0	
0741		10	/											
0754		15	/					Same as above		Moist	0	0	0	0
0759		20	/					Same as above		Moist	0	0	0	0
0805		25	/					Same as above		Moist	0	0	0	0
0808		30	/					Same as above		Moist	0	0	0	0
0814		35	/					Same as above		Moist	0	0	0	0
0819			/							wet at 2 37' BGS				
0910		40	/					Same as above		wet	0	0	0	0
0915		45	/					Same as above		wet	0	0	0	0
0915		50	/											
0917		55	/											
		60	/		EOB 57'									

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

### Drilling Area

Remarks: 3.25" x 5" HSA to total depth

Background (ppm): 0

Descriptions conducted by observing cuttings brought to surface by Augers and may not be accurate.

**Converted to Well:**

**Yes**

**No**

X

Well I.D. #:

**BORING LOG**PROJECT NAME: NWIRP CALVERTONBORING NUMBER: ECM1-TW20PROJECT NUMBER: 7358DATE: 8/11/00DRILLING COMPANY: DELTA WELL & PUMPGEOLOGIST: R. GOODDRILLING RIG: FALLING F-10DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PID/FID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color			Sample	Sample BZ	Borehole	Driller BZ
0819	0											
						MED -LT BROWN		FGR-MGR SAND w/ ROUNDED PEBBLES				
								DAMP - MOIST	0	0	0	0
0821	5							- AS ABOVE -				
0824								MOIST	0	0	0	0
0825	7											
	10					MED BROWN TO GRAY		MGR SAND w/ SOME CGR SAND & ROUNDED PEBBLES				
								MOIST	0	0	0	0
0828	12											
0830												
	15					LT BROWN		FGR-MGR WELL SORTED SAND				
								MOIST	0	0	0	0
0831	17											
0833												
	20					LT BROWN		FGR-MGR, WELL SORTED SAND, TRACE CGR SAND & PEBBLES				
								MOIST	0	0	0	0
0834	22											
0826												
	25							- AS ABOVE -				
								MOIST	0	0	0	0

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" ID x 5' LONG HSA

Drilling Area

Background (ppm): 0

Converted to Well:

Yes

No

Well I.D. #:

**BORING LOG**

PROJECT NAME: NUIRD CALVERTON  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: FAIRING F-10

BORING NUMBER: ECM-TW20  
 DATE: 8-11-00  
 GEOLOGIST: R. GOOD  
 DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PID/FID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
	25											
0837 0838	27					LT BRN FGR-MGA SAND, WELL SORTED w/ FINE CGR SAND & PEBBLES						
	30					LT BRN - AS ABOVE -		MOIST	0	0	0	0
0840 0844	35					LT BRN - AS ABOVE -		MOIST-WET	0	0	0	0
	40							SATURATED @ 36'-39'				
S-1 0852		5/5				LT BRN MGR SAND, SOME FGR & CGR SAND, NUMEROUS ROUNDED PEBBLES		SATURATED	0	0	0	0
	45							DRIVE HYDRODUNCIT TO 45' @ 0905 ECM-TW20-45-01 @ 0930				
S-2 0933		8/9				LT BRN - SAME AS ABOVE -		SATURATED	0	0	0	0
	50											

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" ID HSA & 2" SPLIT SPACERS

Drilling Area  
Background (ppm): 0

Converted to Well: Yes ☐ No ☒ Well I.D. #: \_\_\_\_\_

**BORING LOG**PROJECT NAME: NUWRP CALVERTONBORING NUMBER: ECM-TW20PROJECT NUMBER: 7398DATE: 8-11-00DRILLING COMPANY: DELTA WELL & PUMPGEOLOGIST: R. GOODDRILLING RIG: FAILING F-10DRILLER: MIKE PELLEGRINO

Sample No. and Type or ROD	Depth (Ft.) or Run No.	Blows / 6" or ROD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S *	Remarks	PDM/ID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color			Sample	Sampler B2	Borehole	Driller B2
	50											
S-3 ②		7/8				LT BRN	FGR-MGR SAND w/ TRACE CGR SAND & ROUNDED PEBBLES	SATURATED	0	0	0	0
0941		8/10	8 1/4"									
	55											
S-4 ②		10/11				LT BRN	- AS ABOVE - WELL SORTED w/ SMALLER PEBBLES	SATURATED	0	0	0	0
0948		11/11	24 1/4"									
	60											
S-5 ②		9/12				LT BRN	MGR SAND w/ SOME FGR & CGR SAND AND ROUNDED PEBBLES	SATURATED	0	0	0	0
1025		14/17	24 1/4"									
	65											
S-6 ②		6/6				LT BRN	- SAME AS ABOVE -	SATURATED	0	0	0	0
1035		7/9	12 1/4"									
	70											
S-7 ②		16/20				LT BRN	20" SAND AS ABOVE	SATURATED	0	0	0	0
1043		21/25	24 1/4"				2" MICACEOUS, SILTY, VFGR SAND					
							2" MICACEOUS CLAYEY SILT & TRACE VFGR SAND					
	75											

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" I.D. H/A & 2" SPLIT SPOONSDrilling Area  
Background (ppm): 0

Converted to Well:

Yes

No

Well I.D. #:

A-45

**BORING LOG**

PROJECT NAME: NWIRP CALVERTON  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: DELTA WELL & PUMP  
 DRILLING RIG: FAIRING F-10

BORING NUMBER: ECM-TW20  
 DATE: 8-11-00  
 GEOLOGIST: R. GOOD  
 DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Pl.) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PDFID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
	75											
S-8 ②		20 22				LT. GRAY		6" SILTY, MICACEOUS, FGR SAND	SATURATED	0	0	0
1054		26 30	18" 24"					6" PUTTY-COLORED SILTY CLAY				
								4" MGR-CGR, POORLY SORTED, RUSTY STAINED SAND & GRAVEL				
								2" VFGA-FGR, MICACEOUS SILTY SAND.	DRIVE HYDRO PUNCH TO 80' @ 1100 ECM-TW20-80-01 @ 1122			
	80											
S-9 ②		10 11				LT. BROWN		MGR SAND, SOME CGR SAND & ROUNDED PEBBLES	SATURATED	0	0	0
1128		12 11	20" 24"									
	85											
S-10 ②		17 18				LT. BROWN		1/2" TO 1" ROUNDED PEARL GRAVEL w/ MGR-CGR SAND ..... PEBBLES ARE QZ, GNEISS, SCHIST & SANDSTONE	SATURATED	0	0	0
1136		18 24	14" 24"									
	90											
S-11 ②		10 11				LT. BROWN		10" GRAVEL AS ABOVE 1" CLAYEY SILT LAYER	SATURATED	0	0	0
1147		10 11	24" 24"					13" FGR WELL SORTED SAND				
	95											
S-12 ②		16 18				MED. BROWN		SILTY CLAY w/ A FEW VERY THIN SANDY LAYERS	SATURATED	0	0	0
1155		19 23	20" 24"									
	100								DRIVE HYDRO PUNCH TO 100' @ 1202 ECM-TW20-100-01 @ 1235			

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" ID. HSA & 2" SPLIT SPACERS

Drilling Area  
 Background (ppm): 0

Converted to Well: Yes        No ✓ Well I.D. #:

PROJECT NAME: NWIRP CALVERTON  
PROJECT NUMBER: 7398  
DRILLING COMPANY: DELTA WELL & PUMP  
DRILLING RIG: FAIRBANK F-10

BORING NUMBER: ECM - TW20  
DATE: 8-11-00  
GEOLOGIST: R. BOOD  
DRILLER: MIKE PELLEGRINO

[illegible]

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" ID. HSA & 2" SPACER. DRILL TO 115 FT

Drilling Area  
Background (ppm): 0

Converted to Well:    Yes                      No    ✓                      Well I.D. #:

A-47



Tetra Tech NUS, Inc.

**BORING LOG**Page 1 of 5

PROJECT NAME: NWIRP Culverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: Delta Well + Pump  
 DRILLING RIG: Failing F-10

BORING NUMBER: ECM-TW21  
 DATE: 8-14-00  
 GEOLOGIST: Vince Shickora  
 DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft) or Screened Interval	MATERIAL DESCRIPTION			U S C S	Remarks	PID/FID Reading (ppm)			
						Soil Density/Consistency or Rock Hardness	Color	Material Classification			Sample	Sample BZ	Borehole	Driller BZ
<u>1000</u>		<u>0</u>						<u>Dark Brown Fine to Med</u>		<u>Moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>3</u>						<u>grain Sand with some</u>						
								<u>quartz pebbles</u>						
<u>1002</u>		<u>5</u>						<u>Light Brown - Same as above</u>		<u>Moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
		<u>8</u>												
<u>1007</u>		<u>10</u>						<u>Light Brown-Tan Fine to</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
								<u>medium grain Sand with</u>						
								<u>some quartz gravel</u>						
<u>1011</u>		<u>15</u>						<u>(Same as above)</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>1014</u>		<u>20</u>						<u>Same as above</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>1017</u>		<u>25</u>						<u>Same as above</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>1024</u>		<u>30</u>						<u>Same as above</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>1027</u>		<u>35</u>						<u>Same as above</u>		<u>moist</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>* 1029</u>		<u>40</u>						<u>Light Brown-Tan Fine</u>						
<u>1034</u>	<u>1</u>	<u>41</u>	<u>6</u>	<u>18" / 24"</u>	<u>GW</u>			<u>To Med grain Sand with</u>		<u>wet</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	<u>42</u>	<u>8</u>	<u>18</u>	<u>-</u>				<u>some quartz pebbles</u>						
	<u>45</u>													

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: 3.25" X 5' HSA - 2" X 2' Split Spoons Drilling Area Background (ppm): 0  
- descriptress from 0' to 40' done by observing cutting brought to  
surface by fingers and may not be accurate

Converted to Well: Yes        No X Well I.D. #:

**BORING LOG**

PROJECT NAME: NWIAP Culverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: Delta Well & Pump  
 DRILLING RIG: Falling F-10

BORING NUMBER: ECM-TW21  
 DATE: 8-14-00  
 GEOLOGIST: Vince Shuckoff  
 DRILLER: Mike Pellegrino

Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 5' or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FT) or Screened Interval	MATERIAL DESCRIPTION			U S C S	Remarks	PDMFO Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole	Driller BZ
1123	2	46	10/17	24"/24"			Light Brown - Ten fine						
		47	28/30	-			To medium grain Sand		wet	0	0	0	0
		48		Auger			Some quartz pebbles						
		49		↓									
		50		↓									
1130 1132	3	51	28/30	22"/24"			Same as above		wet	0	0	0	0
		52	2/33	-									
		53		Auger									
		54		↓									
		55		↓									
1131	4	56	16/16	19"/24"			Same as above		wet	0	0	0	0
		57	18/23	-									
		58		Auger									
		59		↓									
		60		↓									
1336 1338	5	61	18/20	20"/24"			Same as above		wet	0	0	0	0
		62	19/21	-									
		63		Auger									
		64		↓									
		65		↓									
1345 1347	6	66	9/10	19"/24"			Same as above		wet	0	0	0	0
		67	10/14	-									
		68		Auger									
		69		↓									
		70		↓									

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: (See previous pages)  
- Hydrograph samples collected at 45 ft, 60 feet, 80 feet, 100 feet and 130 feet

Drilling Area

Background (ppm): 0Converted to Well: Yes ☐ No ☒ Well I.D. #: \_\_\_\_\_



Tetra Tech NUS, Inc.

**BORING LOG**Page 3 of 5

PROJECT NAME: NWIAP Culverton BORING NUMBER: ECM-TW21  
 PROJECT NUMBER: 7398 DATE: 8-14-00  
 DRILLING COMPANY: Delta Well + Pump GEOLOGIST: Vince Shukard  
 DRILLING RIG: Falling F-10 DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PID/FID Reading (ppm)			
						Soil Density/Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
1356	7	71	12/16	17 1/2"			Brown-Tan Fine to Medium		wet	0	0	0	0
		72	18/20	-			grain sand with some						
		73		Auger			pebbles (lower 3" has						
		74					silt-clay)						
		75		↓									
1406	8	76	9/9	19 1/2"			Brown-Tan Fine to Med.		wet	0	0	0	0
		77	10/14	-			grain sand (some silt)						
		78		Auger									
		79		↓									
		80		↓									
1443	9	81	10/12	21 1/2"			Same as above		wet	0	0	0	0
		82	14/18	-			(Lower 4" silty sand						
		83		Auger			with minor clay)						
		84		↓									
		85		↓									
1456	10	86	9/11	22 1/2"			Brown-Tan Fine to Med.		wet	0	0	0	0
		87	12/12	-			grain sand with some						
		88		Auger			quartz pebbles						
		89		↓									
		90		↓									
1503	11	91	10/11	24"			Same as above		wet	0	0	0	0
		92	10/12	-									
		93		Auger									
		94		↓									
		95		↓									

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: (See previous pages)Drilling Area  
Background (ppm): 0Converted to Well: Yes ☐ No ☐ Well I.D. #: \_\_\_\_\_

A-50

**BORING LOG**

PROJECT NAME: NWIRP Colverton  
 PROJECT NUMBER: 7398  
 DRILLING COMPANY: Delta Well + Pump  
 DRILLING RIG: Falling F-10

BORING NUMBER: ECM-TW 21  
 DATE: 8-14-00  
 GEOLOGIST: Vince Shickora  
 DRILLER: Mike Pellegrino

Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 5' or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	MATERIAL DESCRIPTION		U S C S	Remarks	PID/FID Reading (ppm)			
					Soil Density Consistency or Rock Hardness	Color			Sample	Sampler BZ	Borehole	Driller BZ
Time #1516	12	96	9/10	16 1/4"		Brown-Tan fine to med. grain sand - lower 5"		wet	0	0	0	0
		97	11/8	-		Light Brown Silty Clay						
		98		Auger								
		99		↓								
		100		↓								
1550 1552	13	101	12/14	15 1/4"		Light Brown Clayey Silt with very small amount of sand		wet	0	0	0	0
		102	16/16	-								
		103		Auger								
		104		↓								
		105		↓								
1603	14	106	4/4	22 1/4"		Brown Clayey-Sandy Silt		wet	0	0	0	0
		107	6/8	-								
		108		Auger								
		109		↓								
		110		↓								
1609 1611	15	111	5/7	24 1/4"		Same as above		wet	0	0	0	0
		112	6/9	-								
		113		Auger								
		114		↓								
		115		↓								
1621 1623	16	116	5/6			Brown-Gray Same as above		wet	0	0	0	0
		117	6/7	-								
		118		Auger								
		119		↓								
		120		↓								

\* When rock coring, enter rock brokenness.

\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: (see previous pages)Drilling Area  
Background (ppm): 0Converted to Well: Yes        No        Well I.D. #:

PROJECT NAME: NWIRP Culverton  
PROJECT NUMBER: 7398  
DRILLING COMPANY: Deitz Well & Pump  
DRILLING RIG: Fallin. F-10

BORING NUMBER: ECA-TW21

DATE: 8-15-00

GEOLOGIST: Vince Shuckor

DRILLER: Mike Pellegrino

[illegible]

\* When rock coring, enter rock brokenness.

**\*\* Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.**

Remarks: (see previous pages)

Drilling Area  
Background (ppm):

Converted to Well:      Yes                      No                      Well I.D. #:



Tetra Tech NUS, Inc.

## LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME:

Calverton - Naval Base

WELL ID.:

ECM-mw01

PROJECT NUMBER:

4570

DATE:

7/16/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1540	31.88	500	4.5	11	190	9.9	13.1	340	
1545	31.88	700	4.5	11	190	9.9	13.2	342	
1550	31.88	400	4.5	11	190	9.8	13.4	346	
1555	31.88	400	4.5	11	200	9.8	13.6	348	
1600	31.88	425	4.5	11	210	9.8	13.6	349	
1605	31.88	400	4.5	11	220	9.8	13.6	352	
1610	31.88	400	4.5	11	220	9.7	13.7	354	
1615	31.88	400	4.5	11	230	9.7	13.6	356	
1620	31.88	400	4.5	11	250	9.7	13.6	357	
1625	31.88	450	4.5	11	260	9.7	13.6	359	
1630	31.88	450	4.5	11	280	9.6	13.4	361	
1635	31.88	400	4.5	11	300	9.7	13.5	363	
1640	31.88	450	4.5	11	310	9.7	13.5	364	
1645	31.88	450	4.5	11	320	9.5	13.6	365	
1650	31.88	450	4.5	11	330	9.5	13.5	366	
1700	31.88	450	4.4	11	350	9.6	13.5	367	
1705	31.88	450	4.5	11	360	9.5	13.4	367	
1710	31.88	450	4.5	11	370	9.6	13.5	369	
1715	31.88	450	4.5	11	390	9.5	13.5	368	
1720	31.88	450	4.5	11	390	9.5	13.5	368	
1725	31.88	450	4.5	11	410	9.5	13.5	369	
1730	31.88	450	4.5	11	420	9.5	13.5	369	
1735	31.88	450	4.5	11	430	9.5	13.5	369	
1740	31.88	450	4.5	11	420	9.5	13.5	370	
1745	31.88	450	4.5	11	430	9.4	13.4	371	
1750	31.88	450	4.5	11	430	9.5	13.5	371	
1755	Short Sampling								

SIGNATURE(S):

Jessica DanielsPAGE 2 OF 2



Tetra Tech NUS, Inc.

## LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME:

Calverton

PROJECT NUMBER:

WELL ID.: ECM-MW02-0007

DATE:

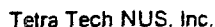
7/11/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1230	31.95	450	5.30	0.131	34.1	11.64	13.50	215	
1235	31.94	450	5.18	0.129	19.5	12.11	14.34	192	
1240	31.94	500	5.15	0.129	14.7	12.17	15.73	1102	
1250	31.94	500	5.07	0.124	12.8	12.47	15.27	173	
1255	31.94	500	5.05	0.123	12.4	12.53	15.20	179	
1300	31.94	350	4.99	0.121	9.9	12.29	16.02	184	
1305	31.94	350	4.97	0.121	9.5	12.28	16.47	182	
1310	31.94	350	4.95	0.120	8.5	12.33	17.01	179	
1315	31.94	300	4.95	0.120	8.8	12.32	17.30	179	
1320	31.94	350	4.95	0.120	8.5	12.43	17.13	180	
1325	31.93	650	4.95	0.116	9.2	12.47	17.03	179	
1330	31.93	400	4.97	0.114	10.1	12.95	17.13	171	
1335	31.93	400	4.99	0.114	10.2	12.66	17.24	161	
1340	31.93	750	5.03	0.114	10.3	12.68	17.60	153	
1345	31.93	750	5.04	0.113	9.4	12.63	16.88	148	
1350	31.93	700	5.04	0.113	11.5	12.83	16.10	146	
1355	31.93	700	5.05	0.113	14.0	12.93	15.90	146	
1400	31.93	500	5.05	0.113	14.8	12.36	16.68	144	
1405	31.93	450	5.07	0.114	11.3	12.90	16.53	151	
1410	31.93	450	5.09	0.114	13.5	12.35	16.96	151	
1415	31.93	450	5.10	0.113	15.5	12.36	17.16	151	
1420	31.94	350	5.12	0.113	13.6	12.19	17.43	147	
1425	31.94	200	5.14	0.112	14.1	12.17	17.76	151	
1430	31.94	750	5.14	0.112	13.5	12.97	16.54	160	
1435	31.94	650	5.15	0.112	15.1	12.33	16.52	160	
1440	31.94	650	5.15	0.112	13.9	12.43	16.62	181	
1445	31.94	650	5.15	0.112	14.8	12.40	16.65	182	
1450	31.94	450	5.15	0.112	15.3	12.20	16.69	185	
1455	31.94	300	5.16	0.112	10.9	11.96	17.03	201	
1500	31.94	500	5.17	0.113	10.8	11.98	16.79	211	*1500 Stop purging.

1503 Begin Sampling.

SIGNATURE(S): 110

PAGE 2 OF 2



## Page 1 of 2

GW MW015-00

Project No.: 4570

Sample Location: ECM

Sampled By: \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

**Low Concentration**

**High Concentration**

- ☐ Domestic Well Data  
☒ Monitoring Well Data  
☐ Other Well Type:  
☐ QA Sample Type:

Date: 7/11/00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1750 1752	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Grundfos	Clear	4.5	11	13.5	430	9.5		

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: <i>rediflow pump</i>								
Monitor Reading (ppm): <i>0.0</i>								
Well Casing Diameter & Material Type: <i>4" PVC</i>	<i>(see low flow data purge sheets)</i>							
Total Well Depth (TD): <i>42.40</i>								
Static Water Level (WL): <i>31.85</i>								
One Casing Volume(gal/L): <i>6.90</i>								
<i>EM 7/10/00</i>								
Start Purge (hrs): <i>1540</i>								
End Purge (hrs): <i>1750</i>								
Total Purge Time (min): <i>130 hrs</i>								
Total Vol. Purged (gal/L): <i>20 gal</i>								

[illegible]

\_\_\_\_\_

**Signature(s):**

**Duplicate ID No.:**

N/A

N/A

Signature(s): Jessica Danieli

TBD: To Be Determined

A-55

Project Site Name: <u>Calverton</u>		Sample ID No.: <u>ECM-MW02-0007</u>							
Project No.: _____		Sample Location: <u>ECM</u>							
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>JD/CM</u>							
<input checked="" type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____							
<input type="checkbox"/> Other Well Type: _____		Type of Sample: _____							
<input type="checkbox"/> QA Sample Type: _____		<input type="checkbox"/> Low Concentration							
		<input type="checkbox"/> High Concentration							
SAMPLING DATA:									
Date: <u>7/1/00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD	
Time: <u>1503</u>	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	NV	
Method: <u>Rediflow 6100/05</u>	<u>Clear</u>	<u>5.17</u>	<u>0.113</u>	<u>16.79</u>	<u>10.8</u>	<u>11.98</u>	<u>211</u>		
PURGE DATA:									
Date: <u>7/1/00</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD	
Method: <u>Rediflow Pump</u>									
Monitor Reading (ppm): <u>1950</u>									
Well Casing Diameter & Material									
Type: <u>4" PVC</u>									
Total Well Depth (TD): <u>44.50</u>									
Static Water Level (WL): <u>31.92</u>									
One Casing Volume(gal/L): <u>0.3</u>									
Start Purge (hrs): <u>12:30</u>									
End Purge (hrs): <u>15:03</u>									
Total Purge Time (min): <u>153</u>									
Total Vol. Purged (gal/L): <u>25gal</u>									
SAMPLE COLLECTION INFORMATION:									
Analysis	Preservative	Container Requirements					Collected		
<u>VOC</u>	<u>HCl</u>	<u>40ml glass (2)</u>					<u>2</u>		
OBSERVATIONS / NOTES:									
<div><div><div>44.50</div><div>31.92</div><div>12.58</div><div>0.653</div><div>37.74</div><div>62.40</div><div>75.48</div><div>75.48</div></div><div>The pump was set at 40 feet BTCL</div></div>									
Circle if Applicable:					Signature(s):				
MS/MSD		Duplicate ID No.:			<div></div>				

IBD: To Be Determined

A-56

<b>Project Site Name:</b>		<u>NWIRP Calverton</u>	<b>Sample ID No.:</b>		<u>ECM-TW07-2-45</u>
<b>Project No.:</b>		<u>4570</u>	<b>Sample Location:</b>		<u>ECM</u>
			<b>Sampled By:</b>		<u>JW</u>
<input type="checkbox"/> Domestic Well Data					
<input type="checkbox"/> Monitoring Well Data					
<input checked="" type="checkbox"/> Other Well Type:		<u>Temporary monitoring well</u>			
<input type="checkbox"/> QA Sample Type:					
			<b>C.O.C. No.:</b>		
			<b>Type of Sample:</b>		
			<input checked="" type="checkbox"/> Low Concentration		
			<input type="checkbox"/> High Concentration		

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
<u>6/26/00</u>								
<u>Time: 1328</u>								
<u>Method: submersible pump</u>								

Date:	Volume	pH	S.C.	Temp. (°C)	Turbidity	DO	Salinity	Other
<u>6/26/00</u>								
<u>Method: submersible pump</u>	<u>0</u>	<u>6.25</u>	<u>111</u>	<u>20.74</u>	<u>196</u>	<u>11.65</u>	<u>83.9</u>	
<u>Monitor Reading (ppm):</u>	<u>1258</u>	<u>5.79</u>	<u>106</u>	<u>17.03</u>	<u>12.5</u>	<u>11.88</u>	<u>243</u>	
<u>Well Casing Diameter &amp; Material</u>	<u>1305</u>	<u>5.29</u>	<u>103</u>	<u>16.54</u>	<u>0.0</u>	<u>11.32</u>	<u>251</u>	
<u>Type: 2" steel</u>	<u>1310</u>	<u>5.12</u>	<u>104</u>	<u>16.29</u>	<u>1.2</u>	<u>11.31</u>	<u>263</u>	
<u>Total Well Depth (TD): 45</u>	<u>1315</u>	<u>5.02</u>	<u>104</u>	<u>16.28</u>	<u>0.8</u>	<u>11.38</u>	<u>273</u>	
<u>Static Water Level (WL): 37.64</u>	<u>1320</u>	<u>4.94</u>	<u>104</u>	<u>16.33</u>	<u>0.7</u>	<u>11.20</u>	<u>278.5</u>	
<u>One Casing Volume(gal/L): 1.2</u>	<u>1325</u>	<u>4.90</u>	<u>104</u>	<u>16.39</u>	<u>0.0</u>	<u>11.13</u>	<u>280</u>	
<u>Start Purge (hrs): 1253</u>								
<u>End Purge (hrs): 1325</u>								
<u>Total Purge Time (min): 0320</u>								
<u>Total Vol. Purged (gal/L): 32</u>								

Analysis	Preservative	Container Requirements	Collected
<u>VOC</u>	<u>-</u>	<u>2 X 40ml</u>	<u>✓</u>

<p><u>- purged at 1 gpm</u></p> <p><u>- sample collected from pump discharge (2" Rediflo pump)</u></p> <p><u>- well screen positioned at 40' to 45'</u></p>
---

Circle if Applicable:	Signature(s):
MS/MSD      Duplicate ID No.:	<u>Donald Weber</u>

Project Site Name:		NWIRP Calverton			Sample ID No.: ECM-TW07-1-			
Project No.:		4570			Sample Location: ECM			
					Sampled By: JW			
<input type="checkbox"/> Domestic Well Data					C.O.C. No.:			
<input type="checkbox"/> Monitoring Well Data					Type of Sample:			
<input checked="" type="checkbox"/> Other Well Type:		Temporary Monitoring well			<input checked="" type="checkbox"/> Low Concentration			
<input type="checkbox"/> QA Sample Type:					<input type="checkbox"/> High Concentration			
<b>SAMPLING DATA:</b>								
Date: 6/26/00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: 1230								
Method: submers. pump								
<b>PURGE DATA:</b>								
Date: 6/26/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO <sub>a</sub>	Salinity	Other WL
Method: submers. pump	0	7.68	176	16.67	136	12.76	75.2	
Monitor Reading (ppm):	1155	7.04	79	16.06	111	12.71	189.2	327'
Well Casing Diameter & Material	200	6.05	73	16.49	7.2	12.61	187.2	
Type: 2" steel	205	5.58	72.00	16.16	2.8	13.16	188	
Total Well Depth (TD): 60'	210	5.47	72.00	15.71	17.2	13.37	198	
Static Water Level (WL): 37.64	1215	5.42	71.00	15.94	14.7	13.05	203	
One Casing Volume(gal/L): 3.6	1220	5.40	70.00	15.58	3.6	13.20	209.1	
Start Purge (hrs): 1150	1225	5.38	71	15.56	0.6	13.46	215	
End Purge (hrs): 1230	1230	5.38	70	15.55	2.0	13.45	220	
Total Purge Time (min): 40								
Total Vol. Purged (gal/L): 48								
<b>SAMPLE COLLECTION INFORMATION:</b>								
Analysis	Preservative	Container Requirements					Collected	
VOA	-	2x 40ml					✓	
<b>OBSERVATIONS / NOTES:</b>								
1150 start at 2.5 gpm } 12.5 gal 1155 reduce to 1 gpm }								
- sample collected from pump discharge								
- well screen positioned at 55' - 60'								
<b>Circle if Applicable:</b>						<b>Signature(s):</b>		
MS/MSD	Duplicate ID No.:	Donald Whalen						

Project Site Name: NWIPP Calverton		Sample ID No.: ECM-TW08-1-	
Project No.: 4570		Sample Location:	
<input type="checkbox"/> Domestic Well Data		Sampled By: DW	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.:	
<input checked="" type="checkbox"/> Other Well Type: Temp. Monitoring well		Type of Sample:	
<input type="checkbox"/> QA Sample Type:		<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration	

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
6/27/00								
Time: 0854								
Method: Hydro-punch	1.8uv	6.76	74	22.1	446	8.62	63.2	

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

Analysis	Preservative	Container Requirements	Collected
VOC	—	2x40ml	✓

- Hydro punch screen at 45.5'-47.5' bgs
---

Circle if Applicable:		Signature(s):  Donald Weber
MS/MSD	Duplicate ID No.:	



Tetra Tech NUS, Inc.

## GROUNDWATER SAMPLE LOG SHEET

Page 1 of 1

Project Site Name: NWIRP Calverton  
Project No.: \_\_\_\_\_

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type: hydropunch  
☐ QA Sample Type: \_\_\_\_\_

Sample ID No.: ECM-TW08-2-6#  
Sample Location: \_\_\_\_\_  
Sampled By: DW  
C.O.C. No.: \_\_\_\_\_  
Type of Sample:  
☒ Low Concentration  
☐ High Concentration

## SAMPLING DATA:

Date: <u>6/27/00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>0755</u>								
Method: <u>Hydropunch</u>	<u>1. Brn</u>	<u>6.57</u>	<u>78</u>	<u>20.04</u>	<u>1170</u>	<u>8.01</u>	<u>66</u>	

## PURGE DATA:

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

## SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOC</u>	<u>—</u>	<u>2x 40ml</u>	<u>✓</u>

## OBSERVATIONS / NOTES:

Hydropunch screen at 63'-64' bgs

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

Donald Weber

A-60

Project Site Name: NWIRP Calverton

Project No.:

Sample ID No.: ECM-TW09-1-05

Sample Location:

Sampled By: D. Whalen

C.O.C. No.:

Type of Sample:

[X] Low Concentration

[ ] High Concentration

☐ Domestic Well Data

☐ Monitoring Well Data

☒ Other Well Type: hydropunch

☐ QA Sample Type:

SAMPLING DATA:

Date: 6/27/00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other
Time: 1425	14. Brn	6.21	203	22.97	1132	4.17	-37.3	Color NA
Method: Hydropunch	sandy							

PURGE DATA:

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:

Hydropunch screen at 43'-44' bgs

Circle if Applicable:

Signature(s): David Whalen

MS/MSD

Duplicate ID No.:

Project Site Name: <u>NWIRP Calverton</u> Project No.: _____		Sample ID No.: <u>ECM-TW09-2-20</u> Sample Location: _____ Sampled By: <u>D.W.</u> C.O.C. No.: _____ Type of Sample: <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration						
<input type="checkbox"/> Domestic Well Data <input type="checkbox"/> Monitoring Well Data <input checked="" type="checkbox"/> Other Well Type: <u>Hydroponch</u> <input type="checkbox"/> QA Sample Type: _____								
<b>SAMPLING DATA:</b>								
Date: <u>6-27-00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>1510</u>								
Method: <u>Hydroponch</u>	<u>1.8 Brown</u>	<u>6.06</u>	<u>181</u>	<u>18.84</u>	<u>563</u>	<u>6.86</u>	<u>7.0</u>	
<b>PURGE DATA:</b>								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								
<b>SAMPLE COLLECTION INFORMATION:</b>								
Analysis	Preservative	Container Requirements					Collected	
<u>VOC</u>	<u>—</u>	<u>2 x 40 ml</u>						
<b>OBSERVATIONS / NOTES:</b>								
Hydroponch screen at 58'-59' bgs								
<b>Circle if Applicable:</b>					<b>Signature(s):</b>			
MS/MSD	Duplicate ID No.:				Donald Whalen			

Project Site Name: <u>NWIRP Calverton</u> Project No.: _____		Sample ID No.: <u>ECM-TW10-1-</u> 05 Sample Location: _____ Sampled By: <u>DW</u> C.O.C. No.: _____ Type of Sample: <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration						
<input type="checkbox"/> Domestic Well Data <input type="checkbox"/> Monitoring Well Data <input checked="" type="checkbox"/> Other Well Type: <u>hydropunch</u> <input type="checkbox"/> QA Sample Type: _____								
<b>SAMPLING DATA:</b>								
Date: <u>6/28/00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>0940</u>								
Method: <u>Hydropunch</u>	<u>Gray-brn</u>	<u>6.11</u>	<u>98</u>	<u>18.59</u>	<u>607</u>	<u>8.29</u>	<u>30.1</u>	
<b>PURGE DATA:</b>								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								
<b>SAMPLE COLLECTION INFORMATION:</b>								
Analysis	Preservative	Container Requirements					Collected	
<u>VOC</u>	<u>—</u>	<u>2X40ml</u>					<u>✓</u>	
<b>OBSERVATIONS / NOTES:</b>								
<u>Hydropunch screen at 48'-49' bgs</u>								
<b>Circle if Applicable:</b>						<b>Signature(s):</b>		
MS/MSD	Duplicate ID No.:					<u>Donald White</u>		

Project Site Name: <u>NWIRP Calverton</u>		Sample ID No.: <u>ECM-TW10-2-</u> <u>20</u>	
Project No.: _____		Sample Location: _____	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>DW</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: _____	
<input checked="" type="checkbox"/> Other Well Type: <u>Hydropunch</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: _____		<input checked="" type="checkbox"/> Low Concentration	
<input type="checkbox"/> High Concentration			

SAMPLING DATA:								
Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time:	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
6/28/00	gray Brown	6.11	71.0	16.52	1214	8.60	-6.2	

PURGE DATA:								
Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:			
Analysis	Preservative	Container Requirements	Collected
VOC	—	2x40ml	✓

OBSERVATIONS / NOTES:
Hydropunch screen at 63'-64' bgs

Circle if Applicable:		Signature(s):  <u>Donald Whalen</u>
MS/MSD	Duplicate ID No.:	

Project Site Name: NWIRP Calverton

Project No.: \_\_\_\_\_

☐ Domestic Well Data

☐ Monitoring Well Data

☒ Other Well Type: hydro punch

☐ QA Sample Type: \_\_\_\_\_

Sample ID No.: ECM-TW11-1-03

Sample Location: \_\_\_\_\_

Sampled By: DW

C.O.C. No.: \_\_\_\_\_

Type of Sample:

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 6-28-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1348	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydromech	4.3ru	6.22	91	21.43	419	6.07	-48.3	

**PURGE DATA:**

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

Hydropunch screen at 48'-49' bgs		
Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	Donald Whalen

Project Site Name: ENWIRP Calverton

Project No.: \_\_\_\_\_

☐ Domestic Well Data

☐ Monitoring Well Data

☒ Other Well Type: hydro punch

☐ QA Sample Type: \_\_\_\_\_

Sample ID No.: ECM-TW11-2-20

Sample Location: \_\_\_\_\_

Sampled By: DW

C.O.C. No.: \_\_\_\_\_

Type of Sample:

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 6/28/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1435	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: hydro punch	lt. Brn	6.64	107	22.41	1249	10.68	41.6	

**PURGE DATA:**

Date:	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

Hydropunch screen at 63'-64' bgs		
Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	Donald Whalen

Page 01

Project Site Name:

NWIRP Cliverton

Project No.:

7398

Sample ID No.: ECM-TW12-01-35

Sample Location: ECM Area

Sampled By: Vince Shuckert

C.O.C. No.:

Type of Sample:

☒ Low Concentration

☐ High Concentration

☐ Domestic Well Data

☐ Monitoring Well Data

☒ Other Well Type:

☐ QA Sample Type:

Temporary well

SAMPLING DATA:

Date: <u>7-17-00</u>	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: <u>0940</u>	<u>very cloudy</u>	<u>6.41</u>	<u>76.3</u>	<u>17.4</u>	<u>988</u>	<u>6.2</u>	<u>120</u>	<u>-</u>
Method: <u>Hydropunch</u>								

PURGE DATA:

Date: <u>N/A</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml vial (x2)</u>	<u>2</u>

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 35 feet BGS. This is approximately 5 feet below water table at 30 feet BGS.
- \* Slight oily sheen seen on surface of water used for field parameters
- no odor or elevated PID readings observed

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):



Tetra Tech NUS, Inc.

## GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NWIAP Celverton  
 Project No.: 7398

Sample ID No.: ECM-TW12-02-50Sample Location: ECM AreaSampled By: Vince ShickoraC.O.C. No.:                     Type of Sample:                     ☐ Domestic Well Data☐ Monitoring Well Data☒ Other Well Type: Temporary Well☐ QA Sample Type:                     ☒ Low Concentration☐ High Concentration

## SAMPLING DATA:

Date: <u>7-17-00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1035</u>	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>cloudy</u>	<u>6.26</u>	<u>30.9</u>	<u>17.0</u>	<u>210</u>	<u>8.4</u>	<u>200</u>	<u>-</u>

## PURGE DATA:

Date: <u>N/A</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

## SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml vials (x2)</u>	<u>2</u>

## OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 50 feet BGS. This is approximately 20 feet below water table of 30 feet BGS.  
 - No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

WAS



Tetra Tech NUS, Inc.

## GROUNDWATER SAMPLE LOG SHEET

Page      of     

Project Site Name: <u>NWIRP Culverton</u>		Sample ID No.: <u>ECM-TW13-01-35</u>	
Project No.: <u>7398</u>		Sample Location: <u>ECM Area</u>	
<input type="checkbox"/> Domestic Well Data		Sampled By: <u>Vince Shickor A</u>	
<input type="checkbox"/> Monitoring Well Data		C.O.C. No.: <u>                    </u>	
<input checked="" type="checkbox"/> Other Well Type: <u>Temporary Well</u>		Type of Sample:	
<input type="checkbox"/> QA Sample Type: <u>                    </u>		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

<b>SAMPLING DATA:</b>								
Date: <u>7-17-00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: <u>1346</u>	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: <u>Hydropunch</u>	<u>cloudy</u>	<u>5.94</u>	<u>48.5</u>	<u>20.1</u>	<u>750</u>	<u>6.7</u>	<u>176</u>	<u>-</u>

<b>PURGE DATA:</b>								
Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

<b>SAMPLE COLLECTION INFORMATION:</b>			
Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml Vials (x2)</u>	<u>2</u>

<b>OBSERVATIONS / NOTES:</b>	
<p>- Hydropunch Sampler set at depth of 35 feet BGS. This is roughly 5 feet below water table of 30 feet BGS.</p> <p>- No odors, stains, or elevated PID Readings observed</p>	

Circle if Applicable:		Signature(s): <u>LAJ</u>
MS/MSD <u>-</u>	Duplicate ID No.: <u>-</u>	

Project Site Name: NwIRP Culverton  
Project No.: 7398

Sample ID No.: ECM-Tw13-02-50

Sample Location: ECM Area

Sampled By: Vince Shickora

C.O.C. No.: \_\_\_\_\_

## Domestic Well Data

## Monitoring Well Data

☒ Other Well Type: Temporary well

QA Sample Type: 1

**Type of Sample:**

☒ Low Concentration

**High Concentration**

**SAMPLING DATA:**

Date: 7-17-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1435	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydro-punch	very cloudy	6.71	51.1	20.7	979	7.3	251	-

**PURGE DATA:**

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

Hydropunch Sampler set at depth of 50 feet BGS. This is approximately 20 feet below water table of 30 feet BGS.

- no odors, stains, or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

*Chas*





Project Site Name: NWIRP Culverton  
Project No.: 7398

Sample ID No.: ECM-TW15-01-42

Sample Location: ECM Area

**Sampled By:** \_\_\_\_\_

C.O.C. No.: \_\_\_\_\_

**Type of Sample:** \_\_\_\_\_

☒ Low Concentration

### High Concentration

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type:  
☐ QA Sample Type:

## Temporary well

**SAMPLING DATA:**

Date: 7-18-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 0905	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropanch	very cloudy	6.02	50.7	19.6	>990	6.1	112	-

**PURGE DATA:**

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch Sampler set at depth of 42 feet BGS. This is approximately 5 feet below water table of 37 feet BGS.
- No odors, stains or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

Duplicate ID No.:

**Signature(s):**

*W. A. S.*



Project Site Name: NWIRP CALVERTON  
Project No.: 7398

Sample ID No.: ECM-TW20-45-01

Sample Location: ECM - TW 20

Sampled By: ROBERT GOOD

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

## Domestic Well Data

## Monitoring Well Data

Other Well Type: TEMPORARY WELL BORING

QA Sample Type: \_\_\_\_\_

☒ Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 0430	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP (mV)	
Method: HYDROPHUNT	BRN	6.46	174	22.0	2900	15.10	-47	

**PURGE DATA:**

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO, AND OPEN AT 45 FT. BELOW SURFACE IN BORING  
ECM - TW 20

NO ODORS OR PID. READINGS ABOVE BACKGROUND

**Circle If Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Pat Lee 8/14/00

TBD: To Be Determined

A-75

Project Site Name: NWIRP CALVERTON  
Project No.: 7348

Sample ID No.: ECA-7420-60-61

Sample Location: ECM-TW20

Sampled By: ROBERT GOOD

C.O.C. No.:

Type of Sample: \_\_\_\_\_

## Domestic Well Data

☐ Monitoring Well Data

Other Well Type: TEMPORARY WELL BORING

QA Sample Type: TEMPERATURE SENSITIVE

### Low Concentration

☐ High Concentration

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	<del>TBD</del> ORP	TBD
Time: 1020	Visual	Standard	mS/cm	°C	NTU	mg/l	✓	
Method: 149.100.00.00.00.00	RAW	6.44	184	21.1	1348	15.5	-43	

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 60 FT BELOW SURFACE IN BORING  
ECM-TW 20.

NO ODORS OR PID. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

8/11/00

TBD: To Be Determined

A-76

Project Site Name: NWIRD CALVERTON  
Project No.: 7398

Sample ID No.: ECM-TW20-80-01

Sample Location: ECM-TW20

Sampled By: ROBERT GOOD

C.O.C. No.:

Type of Sample: \_\_\_\_\_

## Domestic Well Data

## □ Monitoring Well Data

☒ Other Well Type: TEMPORARY WELL BORING

QA Sample Type:

☒ Low Concentration

**High Concentration**

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1122	Visual	Standard	mS/cm	°C	NTU	mg/l	or mV	
Method: HACH DR/PH	RAW	6.80	179	21.2	3240	15.40	-46	

**PURGE DATA:**

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 80 FT BELOW SURFACE IN BORING ECM - TW 20.

NO ODORS OR P.E.D. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSP

**Duplicate ID No.:**

**Signature(s):**

256, 8/11/00

**TBD: To Be Determined**

A-77

Project Site Name: NWIRP CALUZZA  
Project No.: 7398

Sample ID No.: ECM-TW20-100-01

Sample Location: ECM - TW20

Sampled By: ROBERT GOOD

C.O.C. No.: 100517-0000

Type of Sample: \_\_\_\_\_

## Domestic Well Data

- Monitoring Well Data

R Other Well Type: TEMPORARY WELL BORING

QA Sample Type:

☒ Low Concentration

**High Concentration**

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1235	Visual	Standard	mS/cm	°C	NTU	mg/l	ORC (✓)	
Method: H4MSPAVLA	Bar	6.91	180	20.2	3200	14.70	-40	

**PURGE DATA:**

Date: <u>— NA —</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

HYDRO PUNCH SAMPLER DRIVEN TO & OPEN AT 100 FT BELOW SURFACE  
IN BORING ECM - TW20

NO ODORS OR RFA. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Post 8/11/00

IBD: To Be Determined

A-78

Project Site Name: NWIRP CALVERTON  
Project No.: 7348

Sample ID No.: 66M-9620-120-01

Sample Location: ECM - TW 20

Sampled By: ROBERT GOUD

C.O.C. No.:

Type of Sample: \_\_\_\_\_

## Domestic Well Data

## Monitoring Well Data

Other Well Type: TEMPORARY WELL BORING

☐ QA Sample Type: \_\_\_\_\_

### **A Low Concentration**

**High Concentration**

**SAMPLING DATA:**

Date: 8-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1340	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: H4DR00mVCh				NA				

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

HYDROPUNCH SAMPLER DRIVEN TO & OPEN AT 120 FT BELOW SURFACE IN  
BORING ECM - TW20. INSUFFICIENT WATER VOLUME FOR FIELD  
MEASUREMENTS.

NO ODOORS OR PID. READINGS ABOVE BACKGROUND

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

Re: 8/11/00

**BID: To Be Determined**

A-79

Project Site Name: NWIRP Culverton  
Project No.: 7398

Sample ID No.: ECA-TW21-45-01

Sample Location: ECM Area

Sampled By: Vine Shukora

C.O.C. No.: \_\_\_\_\_

**Type of Sample:**

☒ Low Concentration

☐ High Concentration

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type:  
☐ QA Sample Type:

### Temporary Well

**SAMPLING DATA:**

Date: 8-14-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1115	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Hydroponch	very cloudy	(insufficient volume recovered for field measurements)						

**PURGE DATA:**

Date: <u>N/A</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch sampler set at depth of 4.5 feet B.B.S.
- No odors, stains, or elevated PIO readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**



TBD: To Be Determined

A-80

Project Site Name: NWIRP Colverton  
Project No.: 7398

Sample ID No.: ECM-TW21-60-01

Sample Location: ECM Area

Sampled By: Vince Shickora

C.O.C. No.:

**Type of Sample:**

☒ Low Concentration

**High Concentration**

- ☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type:  
☐ QA Sample Type:

### Temporary well

**SAMPLING DATA:**

Date: 8-14-00	Color	pH	S.C.	Temp.	Turbidity	DO	IBD	IBD
Time: 1225	Visual	Standard	ms/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydroponch	Very cloudy	9.13	253	16.89	1345	5.13	-38.4	0.0

**PURGE DATA:**

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <u>C</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch sampler set at depth of 60 feet B.G.S.
- No odors, stains, or elevated PID readings observed

**Circle if Applicable:**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

*[Handwritten signature]*

**TBD: To Be Determined**

A-81



Tetra Tech NUS, Inc.

## GROUNDWATER SAMPLE LOG SHEET

Page \_\_\_ of \_\_\_

Project Site Name: NWIRP Calverton  
 Project No.: 7398

Sample ID No.: ECM-TW21-80-01Sample Location: ECM AreaSampled By: Vince Shickora

C.O.C. No.: \_\_\_\_\_

Type of Sample: \_\_\_\_\_

☐ Domestic Well Data☐ Monitoring Well Data☒ Other Well Type: Temporary Well☐ QA Sample Type: \_\_\_\_\_☒ Low Concentration☐ High Concentration

## SAMPLING DATA:

Date: <u>8-14-00</u>	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: <u>1440</u>	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: <u>Hydropunch</u>	<u>very cloudy</u>	<u>7.81</u>	<u>145</u>	<u>16.60</u>	<u>1106</u>	<u>4.16</u>	<u>-70.2</u>	<u>0.0</u>

## PURGE DATA:

Date: <u>NA</u>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:	/							
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume (gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

## SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>VOCs</u>	<u>HCl</u>	<u>40 ml Vials (x2)</u>	<u>2</u>

## OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 80 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD

Duplicate ID No.: \_\_\_\_\_

Signature(s):

TBD: To Be Determined

A-82

Project Site Name: NWIRP Culvert  
Project No.: 7398

Sample ID No.: ECM-TW21-100-01

Sample Location: ECM Area

Sampled By: Vince Shickor

C.O.C. No.: \_\_\_\_\_

**Type of Sample:**

☒ Low Concentration

**High Concentration**

## Domestic Well Data

## Monitoring Well Data

~~Other Well Type:~~

QA Sample Type:

### Temporary well

### SAMPLING DATA:

Date: 8-14-00	Color	pH	S.C.	Temp.	Turbidity	DO	<del>TDS</del>	<del>TDS</del>
Time: 1545	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydropunch	Cloudy	7.13	306	16.18	1285	1.97	-98.3	0.0

**PURGE DATA:**

Date: <i>NA</i>	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): <i>0</i>								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch sampler set at 100 Feet B.G.S.
- No odors, stains, or elevated PID readings observed

**Circle if Applicable;**

MS/MSD

**Duplicate ID No.:**

**Signature(s):**

*CLH*

TBD: To Be Determined

Project Site Name: NWIRP Calverton  
Project No.: 7398

Sample ID No.: ECM-TW21-13E-01

Sample Location: ECM Area

Sampled By: Vince Shickora

C.O.C. No.:

**Type of Sample:**

~~Low Concentration~~

☐ High Concentration

☐ Domestic Well Data  
☐ Monitoring Well Data  
☒ Other Well Type:  
☐ QA Sample Type:

### Temporary well

**SAMPLING DATA:**

Date: 8-15-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 0925	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydro punch	very cloudy	8.79	259	16.40	1644	1.93	20.4	0.0

**PURGE DATA:**

Date: PA	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

**SAMPLE COLLECTION INFORMATION:**

[illegible]**OBSERVATIONS / NOTES:**

- Hydropunch Sampler set at depth of 130 feet B.G.S. for sampling. (unsuccessful sample attempts, due to lack of recovery, made at 120 ft and 125 ft. BGS)
- No odors, stains, or elevated PID readings observed.

**Circle if Applicable:****MS/MSD**

**Duplicate ID No.:**

**Signature(s):**

*WAS*

TBD: To Be Determined

A-84

Tet. Tech. NUS

PROJECT NO.:				SITE NAME:				NO. OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Total VOCs</div> <div></div> </div>							REMARKS	
SAMPLERS (SIGNATURE):																	
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION												
	6/21/09	1011		X	TR-062600			2	2								Trip Blank
	6/26/09	1230		X	ECM-TW07-1-20			2	2								
	6/26/09	1328		X	ECM-TW07-5-05			2	2								
	6/27/09	0854		X	ECM-TW08-1-05			2	2								
	6/27/09	0955		X	ECM-TW08-2-20			2	2								
	6/28/09	1125		X	ECM-TW09-1-05			2	2								
	6/27/09	1510		X	ECM-TW09-2-20			2	2								
					TEMPERATURE BLANK												
																	Quick Turnaround
RELINQUISHED BY (SIGNATURE):				DATE / TIME:		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):				DATE / TIME:		RECEIVED BY (SIGNATURE):		
6/28/09 0800				6/28/09 0800													
RELINQUISHED BY (SIGNATURE):				DATE / TIME:		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):				DATE / TIME:		RECEIVED BY (SIGNATURE):		
RELINQUISHED BY (SIGNATURE):				DATE / TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):			DATE / TIME:		REMARKS:						
											sample delivered by courier to laboratory						

## CHAIN OF CUSTODY RECORD

[illegible]

A-26

[illegible]

## CHAIN OF CUSTODY RECORD

PROJECT NO.:		SITE NAME:		NO. OF CONTAINERS		REMARKS						
3853-0300		NWIRP Calverton										
SAMPLERS (SIGNATURE):						40 MI VIALS						
[Signature]												
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION							
	7/11/00	1025		X	SA-TW-113-20-01	2	2					
	7/11/00	1115		X	SA-TW-113-35-01	2	2					
	7/11/00	1238		X	SA-TW-113-60-01	2	2					
	7/11/00	1345		X	SA-TW-113-75-01	2	2					
	7/11/00	1435		X	SA-TW-113-95-01	2	2					
	7/11/00	1911		X	(Trip Blank) TB-071100	2	2					
	7/11/00	1503		X	ECM-MW02-0007	2	2					
	7/11/00	1758		X	FD-GW105-00	2	2					
	7/11/00	1942		X	FD-GW340-00	2	2					8.5
					Temperature Blank	1						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[Signature]	7/12/00 0300				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	

88-V

# CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398.		SITE NAME: NWIRP Calverton				NO. OF CON- TAINERS	40 MI Vials VOCs									REMARKS
SAMPLERS (SIGNATURE): <i>L. ASE</i>																
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION											
	7/12/00	0940		X	ECM-TW12-01-35	2	2									
	7/12/00	1035		X	ECM-TW12-02-50	2	2									
	7/12/00	1346		X	ECM-TW13-01-35	2	2									
	7/12/00	1435		X	ECM-TW13-02-50	2	2									
	7/12/00	0905		X	ECM-TW15-01-42	2	2									
	7/19/00	0955		X	ECM-TW15-02-57	2	2									
	7/19/00	1006		X	ECM-TW15-03-00	2	2									
	7/18/00	1245		X	ECM-TW14-01-49	2	2									
	7/12/00	1325		X	ECM-TW14-02-64	2	2									
					Temperature Blank	1										
RELINQUISHED BY (SIGNATURE): <i>L. ASE</i>		DATE / TIME: 7-19-00 0830		RECEIVED BY (SIGNATURE):		RELINQUISHED BY (SIGNATURE):		DATE / TIME:		RECEIVED BY (SIGNATURE):						
RELINQUISHED BY (SIGNATURE):		DATE / TIME:		RECEIVED BY (SIGNATURE):		RELINQUISHED BY (SIGNATURE):		DATE / TIME:		RECEIVED BY (SIGNATURE):						
RELINQUISHED BY (SIGNATURE):		DATE / TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):		DATE / TIME:		REMARKS: Sample shipped by ECOTest Laboratory Courier								

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# CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853.0300					SITE NAME: NWIRP CALVERTON					NO. OF CON- TAINERS	<div style="writing-mode: vertical-rl; transform: rotate(180deg);">40 mL VOC</div>					REMARKS
SAMPLERS (SIGNATURE): ROBERT GOOD <i>Robert Good</i>																
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION											
	8/7/00	1000		✓	(TRIP BLANK) TB080900	2	2									
	8/9/00	1000		✓	SA-PZ102-100-01	2	2									
	8/9/00	1125		✓	SA-PZ102-125-01	2	2									
	8/9/00	1235		✓	SA-PZ102-140-01	2	2									
	8/10/00	0930		✓	RB081000 (RHSARE)	2	2									
	8/11/00	0930		✓	ECM-TW20-45-01	2	2									
	8/11/00	1020		✓	ECM-TW20-60-01	2	2									
	8/11/00	1122		✓	ECM-TW20-80-01	2	2									
	8/11/00	1235		✓	ECM-TW20-100-01	2	2									
	8/11/00	1340		✓	ECM-TW20-120-01	2	2									
TEMPERATURE BLANK						1										
RELINQUISHED BY (SIGNATURE): <i>Robert Good</i>			DATE / TIME: 8/11/00		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED BY (SIGNATURE):			
RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED BY (SIGNATURE):			RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED BY (SIGNATURE):			
RELINQUISHED BY (SIGNATURE):			DATE / TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):			DATE / TIME:		REMARKS: PICKED UP BY LABORATORY (COLUMBIA #) 1400 hrs. Fri. 8/11/00						

A-90

# Ecotest

[illegible]

CLIENT NAVY		JOB NUMBER N3853	
SUBJECT Estimation of relative migration rate for 1,1,1-TCA			
BASED ON		DRAWING NUMBER	
BY JPO	CHECKED BY	APPROVED BY	DATE 8/8/00

Calculation of relative migration rate - 1,1,1-TCA vs. groundwater

### Method

For a compound that is adsorbed onto organic carbon, and the soil/water partitioning is linear (linear sorption isotherm), the retardation factor governing the migration of the compound in groundwater can be calculated as:

$$r_f = 1 + \frac{B_d}{\theta} (K_d), \text{ where } r_f = \text{retardation factor, } V_{gw}/V_{cont.}$$

$B_d$  = Bulk density (dry) of  
equ. for materials

$\theta$  = porosity

$K_d$  = Distribution coefficient  
(soil/water)  
 $= K_{oc} f_{oc}$

$K_{oc}$  = Partition coefficient, soil-  
water, chemical-specific

$f_{oc}$  = fractional amount of  
organic carbon in soil

given  $K_{oc} = 152$  for 1,1,1-TCA

$f_{oc} = .001$

$\theta = .3$

$B_d = (2.65 \text{ g/cc} \times (1 - n)) = 1.85$

$$r_f \text{ for 1,1,1 TCA at the site} = 1 + (1.85 / .3)(152)(.001) = 1.94$$

therefore, gw moves 1.94x as fast as 1,1,1-TCA



**APPENDIX B**  
**ANALYTICAL RESULTS**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203037.07

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, ECM-MW01-0007, 1750

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203058.07

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300

COLLECTED BY: Client

DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, ECM-MW02-0007, 1503

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

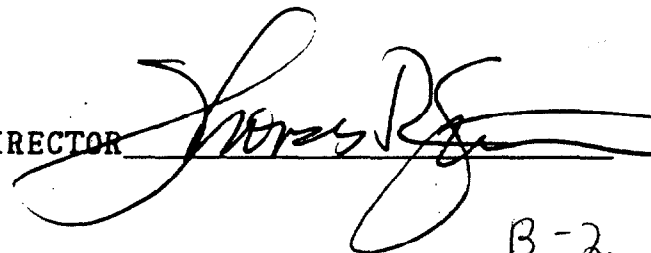
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.03

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client DATE COL'D:06/26/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW07-2-05, 1328

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. Butyl Methyl Ether	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluoromethane	ug/L	<1
Dichlorodifluoromethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.02

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client

DATE COL'D:06/26/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW07-1-20, 1230

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

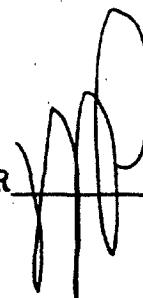
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.04

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client DATE COL'D:06/27/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW08-1-05, 0854

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.05

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client

DATE COL'D:06/27/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW08-2-20, 0955

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-6

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.06

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client

DATE COL'D:06/27/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW09-1-05, 1425

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202830.07

07/05/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT270

COLLECTED BY: Client DATE COL'D:06/27/00 RECEIVED:06/28/00

SAMPLE: Water sample, ECM-TW09-2-20, 1510

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

B-8

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202880.01

07/06/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT0270

COLLECTED BY: Client DATE COL'D:06/28/00 RECEIVED:06/29/00

SAMPLE: Water sample, ECM-TW10-1-05, 0940

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

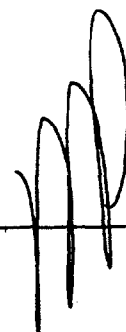
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-9

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202880.05

07/06/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT0270

COLLECTED BY: Client

DATE COL'D:06/29/00 RECEIVED:06/29/00

SAMPLE: Water sample, ECM-TW10-2-20, 1030

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-10

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202880.03

07/06/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT0270

COLLECTED BY: Client

DATE COL'D:06/29/00 RECEIVED:06/29/00

SAMPLE: Water sample, ECM-TW11-1-05, 1348

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:202880.04

07/06/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #CT0270

COLLECTED BY: Client DATE COL'D:06/29/00 RECEIVED:06/29/00

SAMPLE: Water sample, ECM-TW11-2-20, 1435

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-12

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.01

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/17/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW12-01-35, 0940

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.02

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client DATE COL'D:07/17/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW12-02-50, 1035

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-14

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.03

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/17/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW13-01-35, 1346

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.04

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/17/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW13-02-50, 1435

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-16

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.08

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/18/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW14-01-49, 1245

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.09

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/18/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW14-02-64, 1325

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

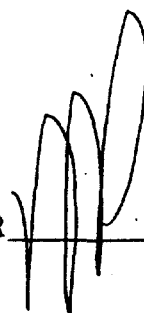
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.05

07/25/00

Tetra Tech Nus, Inc.

Foster Plaza VII, 661 Anderson Dr.

Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/18/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW15-01-42, 0905

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.06

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/18/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW15-02-57, 0955

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-20

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203192.07

07/25/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #7398

COLLECTED BY: Client

DATE COL'D:07/18/00 RECEIVED:07/19/00

SAMPLE: Water sample, ECM-TW15-03-00, 1006

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203659.06

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

P0#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/11/00 RECEIVED:08/11/00

SAMPLE: Water sample, ECM-TW20-45-01, 0930

**ANALYTICAL PARAMETERS**

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

**ANALYTICAL PARAMETERS**

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203659.07

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/11/00 RECEIVED:08/11/00

SAMPLE: Water sample, ECM-TW20-60-01, 1020

**ANALYTICAL PARAMETERS**

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

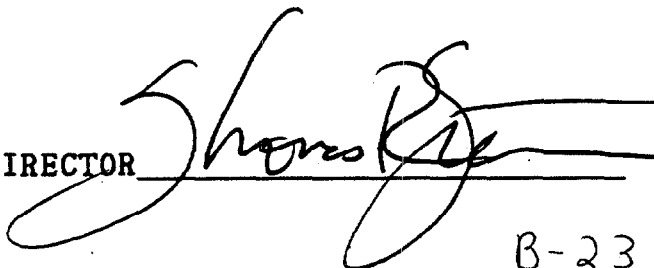
**ANALYTICAL PARAMETERS**

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-23

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203659.08

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/11/00 RECEIVED:08/11/00

SAMPLE: Water sample, ECM-TW20-80-01, 1122

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	2
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

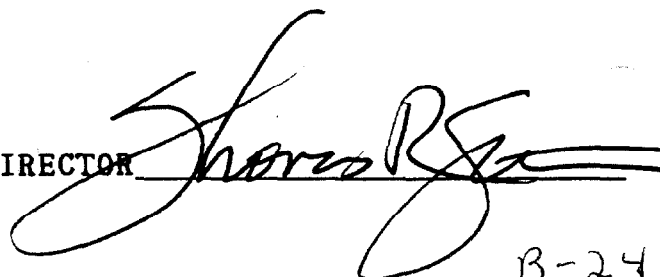
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203659.09

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/11/00 RECEIVED:08/11/00

SAMPLE: Water sample, ECM-TW20-100-01, 1235

**ANALYTICAL PARAMETERS**

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	18
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

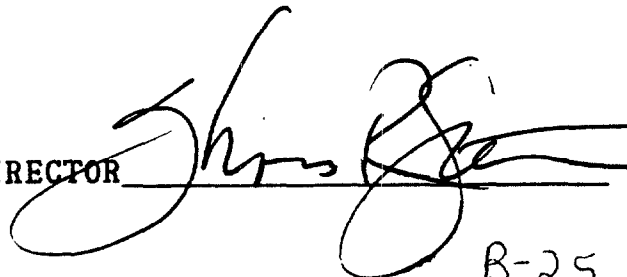
**ANALYTICAL PARAMETERS**

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-25

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203659.10

08/18/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client DATE COL'D:08/11/00 RECEIVED:08/11/00

SAMPLE: Water sample, ECM-TW20-120-01, 1340

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	7
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

B-26

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203697.01

08/21/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/14/00 RECEIVED:08/15/00

SAMPLE: Water sample, ECM-TW21-45-01, 1115

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203697.02

08/21/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client

DATE COL'D:08/14/00 RECEIVED:08/15/00

SAMPLE: Water sample, ECM-TW21-60-01, 1225

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203697.03

08/21/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client DATE COL'D:08/14/00 RECEIVED:08/15/00

SAMPLE: Water sample, ECM-TW21-80-01, 1440

**ANALYTICAL PARAMETERS**

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

**ANALYTICAL PARAMETERS**

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR 

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LAB NO:203697.04

08/21/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client DATE COL'D:08/14/00 RECEIVED:08/15/00

SAMPLE: Water sample, ECM-TW21-100-01, 1545

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



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377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

LAB NO:203697.05

08/21/00

Tetra Tech Nus, Inc.  
Foster Plaza VII, 661 Anderson Dr.  
Pittsburgh, PA 15220-2745

ATTN: David Brayack

PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853

COLLECTED BY: Client DATE COL'D:08/15/00 RECEIVED:08/15/00

SAMPLE: Water sample, ECM-TW21-130-01, 0925

## ANALYTICAL PARAMETERS

Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

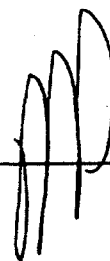
## ANALYTICAL PARAMETERS

Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter. ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlorodifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR



B-31